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REPORT

Willow Rock Energy Storage Center (21-AFC-02)

Data Request Response Set 5

Submitted by:

GEM A-CAES LLC

Prepared with technical assistance from:

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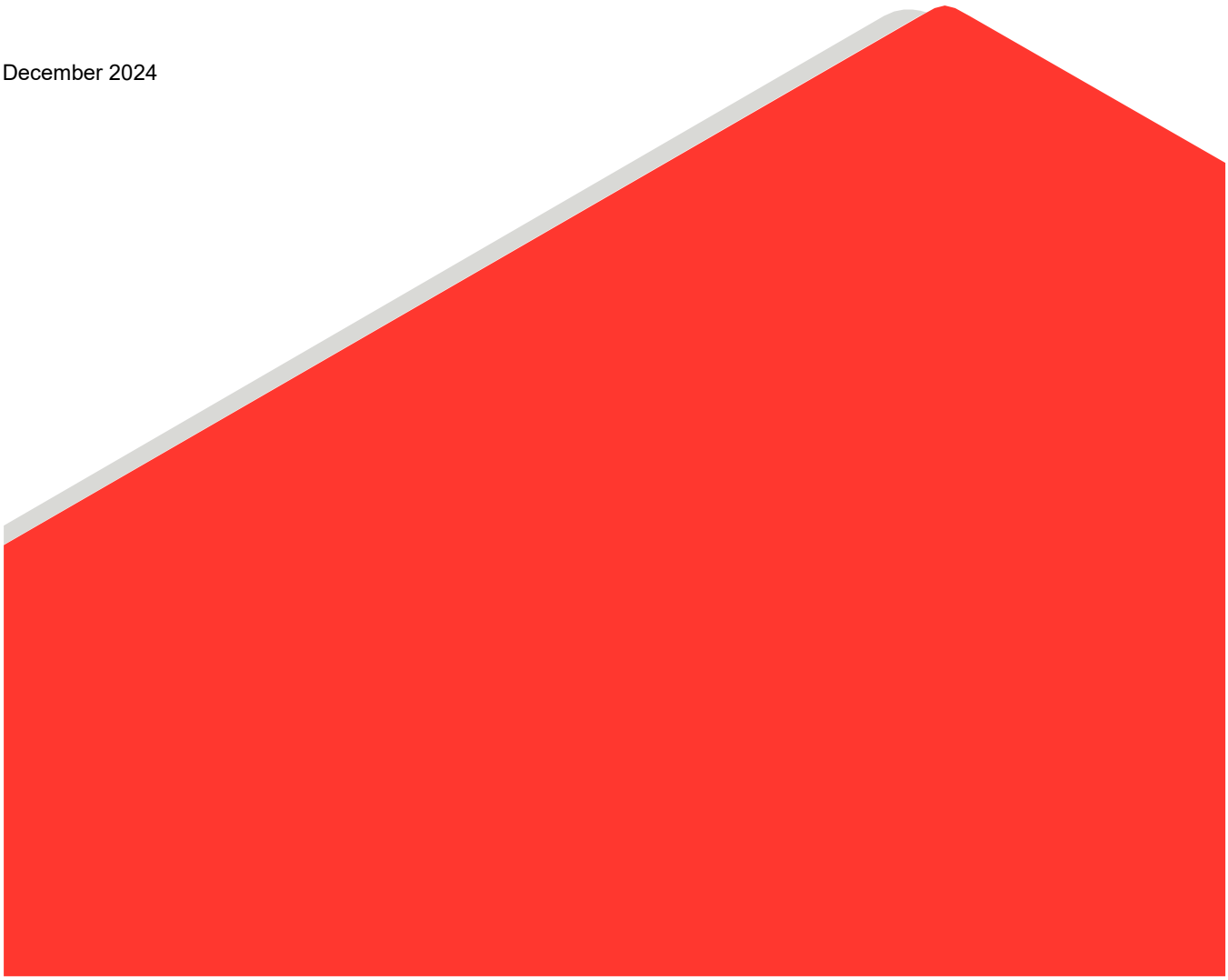
December 2024



Foreword

On March 1, 2024, GEM A-CAES, LLC (Applicant) docketed the Supplemental Application for Certification (SAFC) Volume 1 for the Willow Rock Energy Storage Center (WRESC; 21-AFC-02). On July 16, 2024, the Executive Director recommends that the Committee accept the Supplemental AFC as complete, and that the 12-month timeline to reach a decision on the AFC, as required by Public Resources Code section 25540.6, should begin.

Pursuant to Title 20, California Code of Regulations, section 1716, California Energy Commission (CEC) Staff on November 26, 2024, docketed Data Requests Set 5. Data Requests Set 5 presents a list of questions associated with the resource topic areas of Air Quality; Climate Change/Greenhouse Gases; Hazardous Materials, Hazardous Waste, and Wildfire; Transmission System Engineering; and Worker Safety/Fire Protection.

To address CEC Staff's request, each Data Request within Set 5 has been responded to with supplemental information or guidance on where the information may be found.

Table of Contents

TABLES

ATTACHMENTS

ATTACHMENT DR103-1
1-hour NO_2 Output File Using “POLLUTID NO_2 H1H” (submitted via Kiteworks)

ATTACHMENT DR104-1
CAAQS 1-hour NO_2 Input Files (submitted via Kiteworks)

ATTACHMENT DR104-2
CAAQS 1-hour NO_2 Output Files (submitted via Kiteworks)

ATTACHMENT DR104-3
Hourly NO_2 Data Files (submitted via Kiteworks)

ATTACHMENT DR105-1
FORTRAN Code Used to Select NO_2 Background Value (submitted via Kiteworks)

ATTACHMENT DR116-1
Fire Behavior Fuel Models

1.0 INTRODUCTION

GEM A-CAES LLC's (the "Applicant") is responding to the California Energy Commission (CEC) Staff Data Requests Set 5, numbers:

- **Air Quality**: DR103 through DR105
- **Climate Change/Greenhouse Gases**: DR106
- **Hazardous Materials, Hazardous Waste, and Wildfire**: DR107 through DR116
- **Transmission System Engineering**: DR117 and DR118
- **Worker Safety/Fire Protection**: DR119 and DR120

This response document addresses CEC Data Request Set 5. The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as presented by CEC Staff and are keyed to the Data Request (DR) numbers (DR#). New or revised graphics, tables, or attachments are provided as attachments and are numbered in reference to the Data Request number. For a hypothetical example, the first attachment used in response to Data Request DR103 would be numbered Attachment DR103-1. Each page in this response document is sequentially page-numbered consistently with the remainder of the document, although some attachments may also have their own internal page numbering system.

2.0 AIR QUALITY

2.1 Ambient Air Quality Standard

2.1.1 Data Requests DR103 to DR105

The applicant's modeling files (from Data Request Set 2 Response [TN 259220]) indicate that the evaluation of the project's compliance with the 1-hour NO2 California Ambient Air Quality Standard (CAAQS) uses a default federal processing procedure for 1-hour NO2 concentrations, which is automatically enabled in AERMOD through the setting "POLLUTID NO2." This default setting is for federal NO2 processing and staff is concerned that it may have underestimated the highest 1-hour NO2 concentrations in the evaluation of exceedances against the 1-hour NO2 CAAQS. In addition, the background concentrations of NO2 in the evaluation of the 1-hour NO2 CAAQS should capture the maximum single-hour background concentration or the maximum seasonal hour-of-day values (SEASHR) for the most recent three years available, rather than the 3rd highest seasonal hour-of-day values for 1-hour NO2 National Ambient Air Quality Standard (NAAQS).

DR103: *Please confirm that use of the setting "POLLUTID NO2", as in the applicant's refined 1-hour NO2 CAAQS analysis, provides a conservative result that matches or exceeds the result that would otherwise be obtained by setting "POLLUTID NO2 H1H." If not, please reevaluate 1-hour NO2 impacts using "POLLUTID NO2 H1H."*

Response: While the modeling analysis did not utilize the use of "H1H" on the command options for the "POLLUTID", the modeling input file utilized the keyword "MAXTABLE ALLAVE 50" on the output pathway. This creates modeling output for all 1-hour averaging periods and includes the maximum first high output. This was also verified by using the "H1H" command (provided as **Attachment DR103-1** via Kiteworks) which perfectly matches the maximum 1-hour output on the "MAXTABLE" output previously provided in Data Response Set 2. The modeling output using the "MAXTABLE" thus provides conservative results and can be used as a replacement for the "H1H" command.

DR104: *Please ensure that the evaluation of 1-hour NO2 impacts in relation to the CAAQS captures either the maximum single-hour background concentration or the maximum seasonal hour-of-day values for the most recent three years available.*

Response: The CAAQS modeling used the same seasonal hour-by-day background NO_2 data that was utilized in the NAAQS modeling. The construction berm/no berm modeling scenarios have been revised to use the maximum background seasonal hour-by-day and are presented in **Tables DR104-1 and DR104-2** below for the CAAQS. The results demonstrate continued compliance with both the CAAQS and NAAQS for the 1-hour NO_2 averaging period. The modeling input/output files and hourly NO_2 data files are being submitted as **Attachments DR104-1, DR104-2, and DR104-3**, respectively, via Kiteworks.

Table DR104-1: Construction Air Quality Impact Results – Architectural Berm Option

Pollutant	Averaging Time	Maximum Concentration (µg/m³)	Background (µg/m³)	Total (µg/m³)	Ambient Air Quality Standards (µg/m³)	
					CAAQS	NAAQS
NO_2	1-hr (highest)	297.40	-	297.40	339	-
	1-hr (98th percentile)	157.41	-	157.41	-	188

NO_2 totals based on OLM with first high (CAAQS) or third high (NAAQS) seasonal hour-by-day NO_2
Background NO_2 was included with the maximum concentration in the model

Table DR104-2: Construction Air Quality Impact Results – No Architectural Berm Option

Pollutant	Averaging Time	Maximum Concentration (µg/m³)	Background (µg/m³)	Total (µg/m³)	Ambient Air Quality Standards (µg/m³)	
					CAAQS	NAAQS
NO_2	1-hr (highest)	335.54	-	335.54	339	-
	1-hr (98th percentile)	174.59	-	174.59	-	188

NO_2 totals based on OLM with first high (CAAQS) or third high (NAAQS) seasonal hour-by-day NO_2
Background NO_2 was included with the maximum concentration in the model

DR105: *Please support the selection of background NO2 concentration values by submitting a copy of historical NO2 monitoring data and the worksheet used in developing the seasonal hour-of-day values.*

Response: The historical background concentration data is being provided as **Attachment DR104-3**. A spreadsheet was not used to process the background data. Instead, the background data was processed by writing code in FORTRAN. A copy of this code is being provided as **Attachment DR105-1** via Kiteworks.

3.0 CLIMATE CHANGE/GREENHOUSE GASES

3.1 R-410A Refrigerant

3.1.1 Data Request DR106

The applicant's responses to DR 48, DR 50, and DR 51 discuss the use of R-410A in the air conditioning system for the project. R-410A has a global warming potential (GWP) of 2,088. The regulation Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning and Other End-Uses (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4, Subarticle 5, Section 95374) prohibits the use of refrigerants with a GWP greater than 750 as of January 1, 2025. Since the start of construction will begin in March 2025, R-410A will be prohibited from use.

DR106: *Please exclude the use of R-410A in the air conditioning system, propose an alternative refrigerant, and provide updated greenhouse gas emission estimates associated with the newly proposed refrigerant.*

Response: WRESC has worked with its design team and potential chiller suppliers to utilize R-32 and R-454B in place of the R-410A. To provide annual leakage estimates for purposes of greenhouse gas (GHG) emissions calculation, the table below summarizes the data on the proposed chiller units and the estimated emissions for the chosen alternative refrigerant R-454B.

Parameter	Data
Refrigerant Used	R-32, R-454B
# of R-32 Chiller Units	5
# of R-454B Chiller Units	39
R-32 Charge Amount/Total All Units	36 lbs
R-454B Charge Amount/Total All Units	448 lbs
Leak Rate [1]	7.1 % wt/yr
R-32 Emissions/Total All Units Based on Leak Rate	2.556 lbs/yr
R-454B Emissions/Total All Units Based on Leak Rate	31.808 lbs/yr
GWP R-32 (NRI) [2]	675
GWP R454B (NRI) [2]	466
Total CO_2e Based on R-32	0.84 Mtons/yr
Total CO_2e Based on R-454B	7.23 Mtons/yr
Total CO_2e	8.07 Mtons/yr

Data sources:

1. Weighted average of residential and commercial central and window-mounted units. California High Global Warming Potential Gases EI, TSD, AQPSD, April 2016.
2. https://learnmetrics.com/refrigerant-gwp-chart/

4.0 HAZARDOUS MATERIALS, HAZARDOUS WASTE, AND WILDFIRE

4.1 Diesel Fuel Storage

4.1.1 Data Requests DR107 to DR109

DR107: *Please clarify where the two different types of diesel fuel would be stored onsite and the size and types of storage containers for the two types of diesel fuel.*

Response: Contractor expects to store a total of 10,000 gallons of diesel fuel for fueling construction equipment and trucks in the refueling yard. Storage will include 8,000 gallons of dyed diesel and 2,000 gallons of clear diesel in double-walled, aboveground storage tanks (ASTs). Some equipment will fill up at the refueling yard. Other equipment will be fueled on-site by the refueling truck. Contractor will comply with all local, state, and federal laws related to diesel storage. A detailed plan will be developed and implemented during the execution phase of the project.

DR108: *Please clarify what type of diesel fuel will be stored in the 10,000-gallon AST that the contractor anticipates using during construction (as stated in the DR 27 response).*

Response: For clarification, there will be two separate ASTs, an 8,000 tank and a 2,000-gallon tank, and that prior reference to a 10,000 tank was inaccurate. Storage will include 8,000 gallons of dyed diesel and 2,000 gallons of clear diesel in double-walled, aboveground storage tanks. Contractor will comply with all local, state, and federal laws related to diesel storage. See also DR107 response above.

DR109: *Please clarify in what conditions and for what types of equipment refueling would occur in the construction refueling yard.*

Response: For clarification, the Applicant is proposing both refueling from the ASTs located in the construction yard and a mobile refueler. Smaller construction equipment and more mobile construction equipment will be refueled in the refueling yard, while larger less mobile construction equipment (e.g., cranes, earthmover, etc.) will likely be refueled in the construction work area.

4.2 Storage and Disposal of Construction Related Hazardous Wastewater

4.2.1 Data Requests DR110 to DR112

DR110: *Please provide information on how disposal of construction generated hazardous wastewater would comply with State requirements, such as the Hazardous Waste Control Law, Porter-Cologne Act and related Water Code sections, and local requirements.*

Response: For clarification, the Applicant does not anticipate that hazardous wastewater will be generated during construction. Non-hazardous wastewater may be produced during cleaning of pipes and vessels. Specifically, the non-hazardous wastewater would be generated during hydrostatic testing and commissioning. The non-hazardous wastewater may contain mill scale or rust from the piping and containers. The non-hazardous wastewater will be temporarily stored in a portable storage tank (i.e., Baker Tank or similar structure) and characterized prior to offsite treatment and disposal. The offsite disposal will be performed by a licensed hauler.

DR111: *Please provide a summary of which State and local regulations and requirements would apply to the testing, storage, transportation, and disposal of hazardous wastewater generated during construction activities and how they would be applied.*

Response: As stated in DR110, the Applicant does not anticipate the generation of hazardous wastewater during construction.

DR112: *Please provide information on how hazardous wastewater generated during construction activities would be segregated prior to testing and disposal. Additionally, please provide information on what volume of hazardous*

wastewater would be allowed to accumulate (be stored) onsite prior to disposal and how often hazardous wastewater would be disposed of.

Response: As stated in DR110, the Applicant does not anticipate the generation of hazardous wastewater during construction.

4.3 Wildfire Ignition

4.3.1 Data Requests DR113 to DR115

Section 5.16.1.6 briefly discusses potential for increased risks of wildfire during project operation and increased potential for project construction to create a source of wildfire ignition. There is no detail given about what type of construction activities could ignite nearby dry vegetation other than "Heat or sparks from vehicles and equipment could ignite dry vegetation". Further, the included Best Management Practices (BMPs) to reduce the likelihood of potential incidents involving wildfire (Section 5.16.3) do not include any BMPs related to construction activities that could ignite wildfire other than BMPs related to storge, handling, and use of explosives. Additionally, there is no information provided on what type of conditions, i.e. Red Flag Warning days or high wind, that would preclude or limit certain types of activities that could ignite a wildfire.

DR113: *Provide a discussion of the anticipated types of construction activities that could ignite a wildfire such as welding or other hot work.*

Response: Prior to any activities, the job site will be cleared, grubbed, and free of combustible vegetation. Most of the project's hot work will be performed on a developed, fenced job site. During clearing and grubbing, heavy equipment will be monitored to ensure tailpipes or exhaust do not encounter combustible vegetation. Activities that could cause ignition include operations that will use grinder on metal, torching or cutting, or welding. During construction, good industrial hygiene will be maintained to ensure the job site is safe and secure. For instance, staff will be assigned to ensure that an accumulation of tumbleweed or other flammable materials does not occur. These responsibilities will be detailed in a health and safety plan for the job site.

DR114: *Please provide BMPs related to reducing risk of igniting a wildfire that address construction activities other than blasting safety.*

Response: The BMPs that will be deployed onsite to prevent wildfire include but are not limited to the following activities:

- Daily tailgate safety meetings and Job Hazard Analyses (JHA).
- All personnel working on the Project will be trained with respect to fire prevention and control.
- As part of the training session, workers will be made aware of proper disposal methods for hot or potential to burn material.
- During the wildfire season and fire ban mandates, Contractor will monitor the wildfire activity and danger ratings daily and ensure the proper prevention and response planning is in place to address any Project wildfire risk.
- Portable extinguishers will be maintained in a fully charged and operable condition.
- Equipment will be inspected and maintained in good working condition (i.e., leaks, engine condition, breaks).

- Undercarriage inspections will occur daily to ensure vegetation does not accumulate and there are no visible signs of fluid leaks.

DR115: *Please provide a discussion of what, if any, conditions, such as Red Flag Warning days, would preclude or limit construction activities such as hot work and what construction activities would be allowed under high fire hazard days such as during Red Flag Warnings or high wind days.*

Response: In addition to the deployment of the BMPs presented in DR114, above ground welding operations will not be performed under high wind conditions, including red flag days.

4.4 Fuel Models for Project Site and Transmission Line

4.4.1 Data Request DR116

Section 5.16.1.3.4 provides a discussion of fire fuel sources in the project area and the Tehachapi Management Area. Included in this section is a brief discussion of the Fuel Models present in the area and a table that describes the Fuel Models. However, the section does not indicate how the varying Fuel Models relate to varying portions of the project.

DR116: *Provide a discussion and map that indicates how each identified Fuel Model relates to the project specifically and where they are in relation to each component of the project, including the transmission line.*

Response: The following discussion summarizes the fuel behavioral model mapping for the Project Area:

FBFM2 is described as timber (grass and understory). In FBFM2, fire primarily spreads through fine herbaceous fuels, either cured or dead, resulting in surface fires. These fires gain intensity from herbaceous material, litter, and dead/down stemwood in open shrublands or timbered areas. Vegetation types like open shrublands, pine, or scrub oak stands (covering 1-2/3 of the area) often align with this model and may include fuel clumps that increase fire intensity and produce firebrands. Some pinyon-juniper systems may also fit this fire behavior model.

FBFM5 is described as brush. In FBFM5, fire spreads primarily through surface fuels, consisting of shrub litter and understory grasses or forbs. These fires are typically low-intensity due to light fuel loads, young shrubs with minimal dead material, and low volatile content in the foliage. This model applies to short shrubs that almost fully cover the area, including young stands of laurel, vine maple, alder, chaparral, manzanita, or chamise.

FBFM8 is described as closed timber litter. In FBFM8, fires are typically slow-burning ground fires with low flame lengths, though occasional heavy fuel concentrations may flare up. Fire hazards increase only under severe weather conditions, such as high temperatures, low humidity, and strong winds. Closed-canopy stands of short-needle conifers or hardwoods primarily burn in a compact litter layer of needles, leaves, and twigs, with little undergrowth. Representative conifers include white pine, lodgepole pine, spruce, fir, and larch.

Attachment DR116-1 provides a map showing the relevant fuel models in relationship to project components. The following describes how each fuel model geographically relates to the Project:

- Based on data from LANDFIRE, the fire behavior fuel models (FBFM) surrounding the transmission line and Project components are FBFM2, FBFM5, and FBFM8.
- FBFM2 dominates the area on the eastern side of the WRESC site.
- FBFM5 and FBFM8 make up the areas to the west of the WRESC site along Dawn Road.

- FBFM2 dominates the area surrounding Mojave Tropico Road.
- The majority of Rosamond Boulevard is surrounded by urban areas that do not include an FBFM, however FBFM2, FBFM5, and FBFM8 are dispersed along some sections of the road, with FBFM5 being the most dominant.
- The Whirlwind Substation is mostly surrounded by FBFM2, however, both FBFM5 and FBFM8 occur on the northeast side of the substation.
- The majority of existing and proposed transmission line poles are located in urban areas that are not classified with an FBFM.
- The majority of pull and tensioning sites overlap with FBFM2, FBFM5, or FBFM8.

5.0 TRANSMISSION SYSTEM ENGINEERING

5.1 Large Generator Interconnection Agreement

5.1.1 Data Requests DR117 and DR118

Data Request Response Set 3 (DRR Set 3) indicated that DR 67, the Large Generator Interconnection Agreement (LGIA attachment DR67-1), has been submitted under a repeated application for confidentiality (TN 259676); and the applicant is working on an amendment with Southern California Edison (SCE).

DR117: *Please provide updates or amendments to the LGIA with SCE when they are available.*

Response: The Applicant previously provided the LGIA on October 23, 2024 (TN 260243). The Applicant will provide any updated LGIA information as it becomes available.

DR118: *Please provide any Material Modification Agreements when they are available.*

Response: The Applicant will provide any Material Modification Agreements as they become available.

6.0 WORKER SAFETY/FIRE PROTECTION

6.1 Training and Diesel-Fueled Load Haul Dump (LHD) Vehicles

6.1.1 Data Requests DR119 and DR120

The applicant's response to Worker Safety/Fire Protection data requests Set 3 (TN 259675) WS-70 states several times that *"The Applicant will comply with the regulations listed below as applicable to the topsides scope of work."* Staff is requesting clarification of the use of the term “topsides” as it appears to imply that the regulations discussed would only be applicable to surface work conditions, not to underground work and underground worker training. It is clear that workers would be entering the shaft and cavern (revised Section 5.17 Worker Health and Safety states that underground safety training and underground emergency response training would be given to all employees entering underground facilities), however, the use of the word “topsides” in DRR WS-70 is causing confusion. Also, the use of diesel-fueled equipment stated in DDR-72 raises other concerns.

DR119: *Please clarify the applicant’s intent to follow the listed regulations when conducting underground worker safety and training or provide an in-depth rationale why the applicant believes they apply only to surface (“topsides”) activities.*

Response: The Applicant intends to comply with the regulations listed in DR70 for both aboveground and underground construction.

DR120: *Please provide a further discussion on how exhaust from the diesel-fueled load haul dump (LHD) vehicles will be removed from the cavern and not pose a risk to workers conducting underground activities. Please also describe the basis for using diesel-fueled LHD vehicles underground instead of electric LHD vehicles.*

Response: The cavern will be constructed with a dedicated ventilation shaft and positive ventilation fans to remove diesel exhaust from the cavern's base and discharge it into the atmosphere. Airflow within the cavern will be directed with curtains and drift fans. Cavern workers will be outfitted with personal air monitoring equipment that will alert staff should unsafe conditions occur so that they can take appropriate actions to protect personal safety in accordance with the worker health and safety plan. The ventilation plan will be prepared in accordance with MSHA regulations and standards. A ventilation plan will be incorporated into the detailed design of the cavern.

Diesel-fueled load haul dump (LHD) vehicles provide greater dependability during construction activities and have many decades of well-established safety standards and procedures. The use of electric LHD vehicles would require the installation of charging stations and additional infrastructure. To achieve the same productivity, a larger electric LHD vehicle inventory would be required as some vehicles charge, the others would operate.

ATTACHMENT DR103-1

1-hour NO_2 Output File Using "POLLUTID NO_2 H1H" (submitted via Kiteworks)

ATTACHMENT DR104-1

CAAQS 1-hour NO_2 Input Files (submitted via Kiteworks)

ATTACHMENT DR104-2

CAAQS 1-hour NO_2 Output Files (submitted via Kiteworks)

ATTACHMENT DR104-3

Hourly NO_2 Data Files (submitted via Kiteworks)

ATTACHMENT DR105-1

FORTRAN Code Used to Select NO_2 Background Value (submitted via Kiteworks)

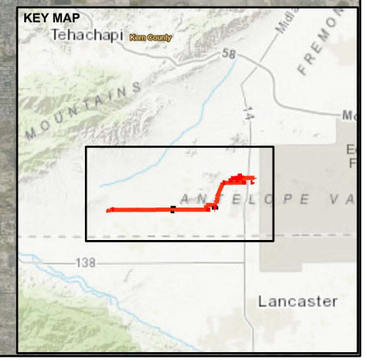
ATTACHMENT DR116-1

Fire Behavior Fuel Models

N

Page 1
Page 2
Page 3
Page 4
Page 5
Page 6
Page 7
Page 8
Page 9
Page 10
Page 11
Page 12
Page 13
Page 14
Page 15
Page 16
Page 17
Page 18
Page 19
Page 20
Page 21
Page 22

KEY MAP



LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Preferred Route, Underground
- Route Options 1-6, Aboveground
- Route Options 1-6, Underground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
- WRESC Site
- Other Project Parcels
- SCE Whirlwind Substation
- Proposed Access Roads

FBFM
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 7,000 14,000 FEET

1" = 7,000 ft

NOTE(S)
1. PROJECT ROW IS 62.5 FT ON EITHER SIDE OF THE PROPOSED TRANSMISSION LINE ROUTE
2. TRANSMISSION LINE POLE POINTS ARE NOT TO SCALE, THESE POLES HAVE UP TO A 6FT DIAMETER.
3. SEE FOLLOWING PAGES FOR ADDITIONAL PROJECT FEATURES

REFERENCE(S)
1. FIRE BEHAVIOR FUEL MODELS (FBFM0, LANDFIRE 2023
2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULL AND TENSIONING SITES,PROPOSED T-LINE POLE, PROPOSED ACCESS ROADS: HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD IMAGERY: EARTHSTAR GEOGRAPHICS WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

CONSULTANT
wsp

YYYY-MM-DD	2024-12-16
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

PROJECT NO.	PHASE	REV.	FIGURE
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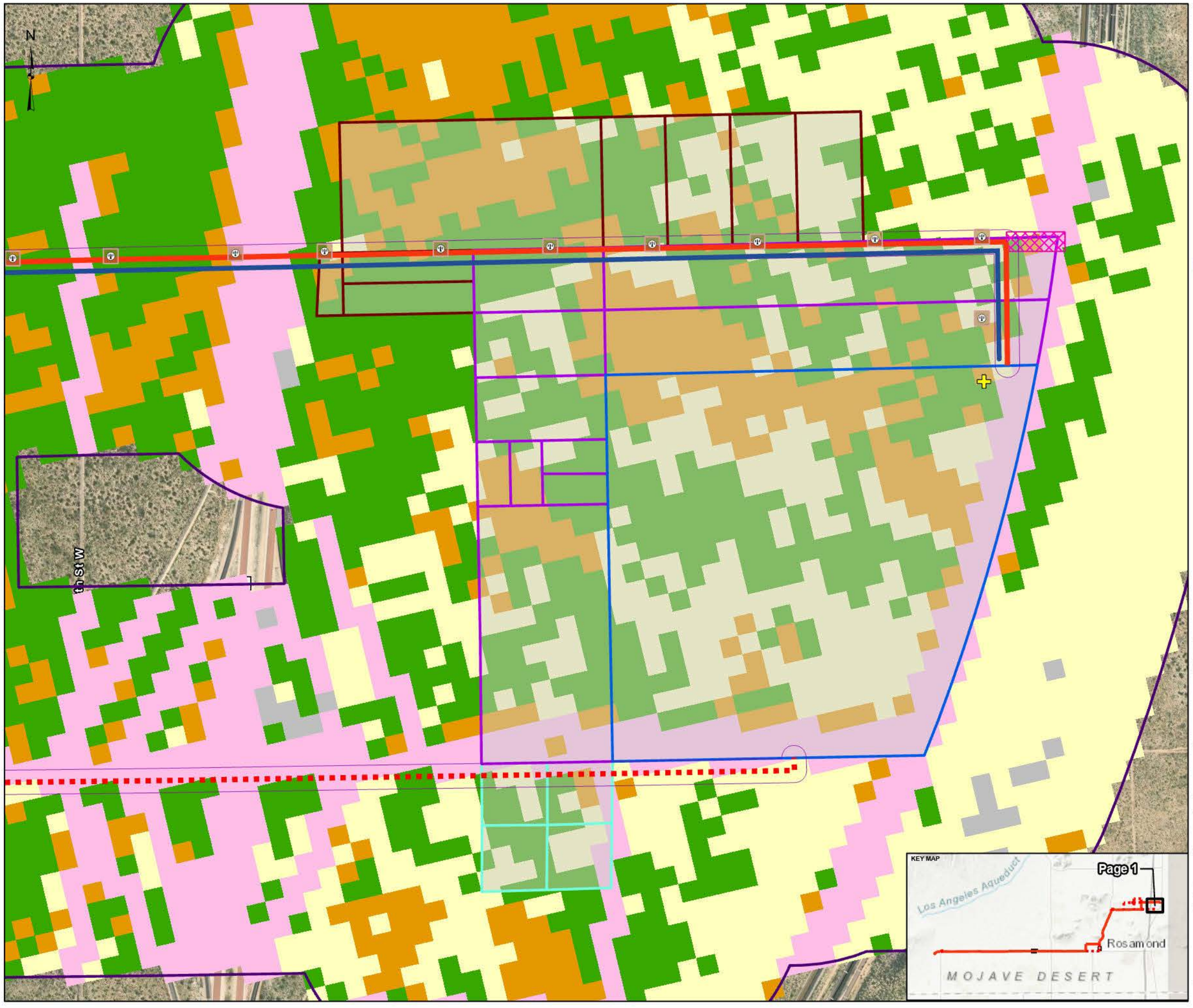

LEGEND

Transmission Line Pole Location
- Proposed
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Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Route Options 1-6, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
- WRESC Site
- P1
- P2 North
- P2 South
- Proposed Access Roads

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000
1" = 500 ft FEET

NOTE(S)
1. PROJECT ROW IS 62.5 FT ON EITHER SIDE OF THE PROPOSED TRANSMISSION LINE ROUTE
2. TRANSMISSION LINE POLES ARE NOT TO SCALE AND ARE SYMBOLIZED LARGER FOR READABILITY. THESE POLES HAVE A UP TO A 6FT DIAMETER.

REFERENCE(S)
1. FIRE BEHAVIOR FUEL MODELS (FBFM): LANDFIRE, 2023
2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULL AND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS: HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: BUREAU OF LAND MANAGEMENT, ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
HYBRID REFERENCE LAYER: ESRI COMMUNITY MAPS CONTRIBUTORS, CALIFORNIA STATE PARKS, © OPENSTREETMAP, MICROSOFT, ESRI, TOMTOM, GARMIN, SAFEGRAPH, GEOTECHNOLOGIES, INC, METI/NASA, USGS, BUREAU OF LAND MANAGEMENT, EPA, NPS, US CENSUS BUREAU, USDA, USFWS
WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT
wsp

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-1

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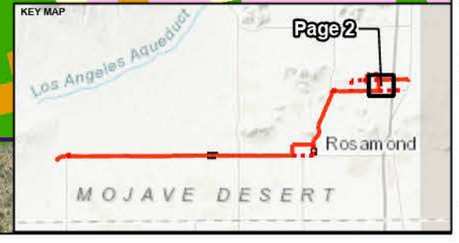
KEY MAP



LEGEND

Transmission Line Pole Location
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- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Route Options 1-6, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
- Proposed Access Roads

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000

1" = 500 ft FEET

NOTE(S)

1. PROJECT ROW IS 62.5 FT ON EITHER SIDE OF THE PROPOSED TRANSMISSION LINE ROUTE.
2. TRANSMISSION LINE POLES ARE NOT TO SCALE AND ARE SYMBOLIZED LARGER FOR READABILITY. THESE POLES HAVE A UP TO A 6FT DIAMETER.

REFERENCE(S)

1. FIRE BEHAVIOR FUEL MODELS (FBFM), LANDFIRE, 2023
2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULL AND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS: HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
HYBRID REFERENCE LAYER: ESRI COMMUNITY MAPS CONTRIBUTORS, CALIFORNIA STATE PARKS, © OPENSTREETMAP, MICROSOFT, ESRI, TOMTOM, GARMIN, SAFEGRAPH, GEOTECHNOLOGIES, INC, METI/NASA, USGS, BUREAU OF LAND MANAGEMENT, EPA, NPS, US CENSUS BUREAU, USDA, USFWS
WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

wsp

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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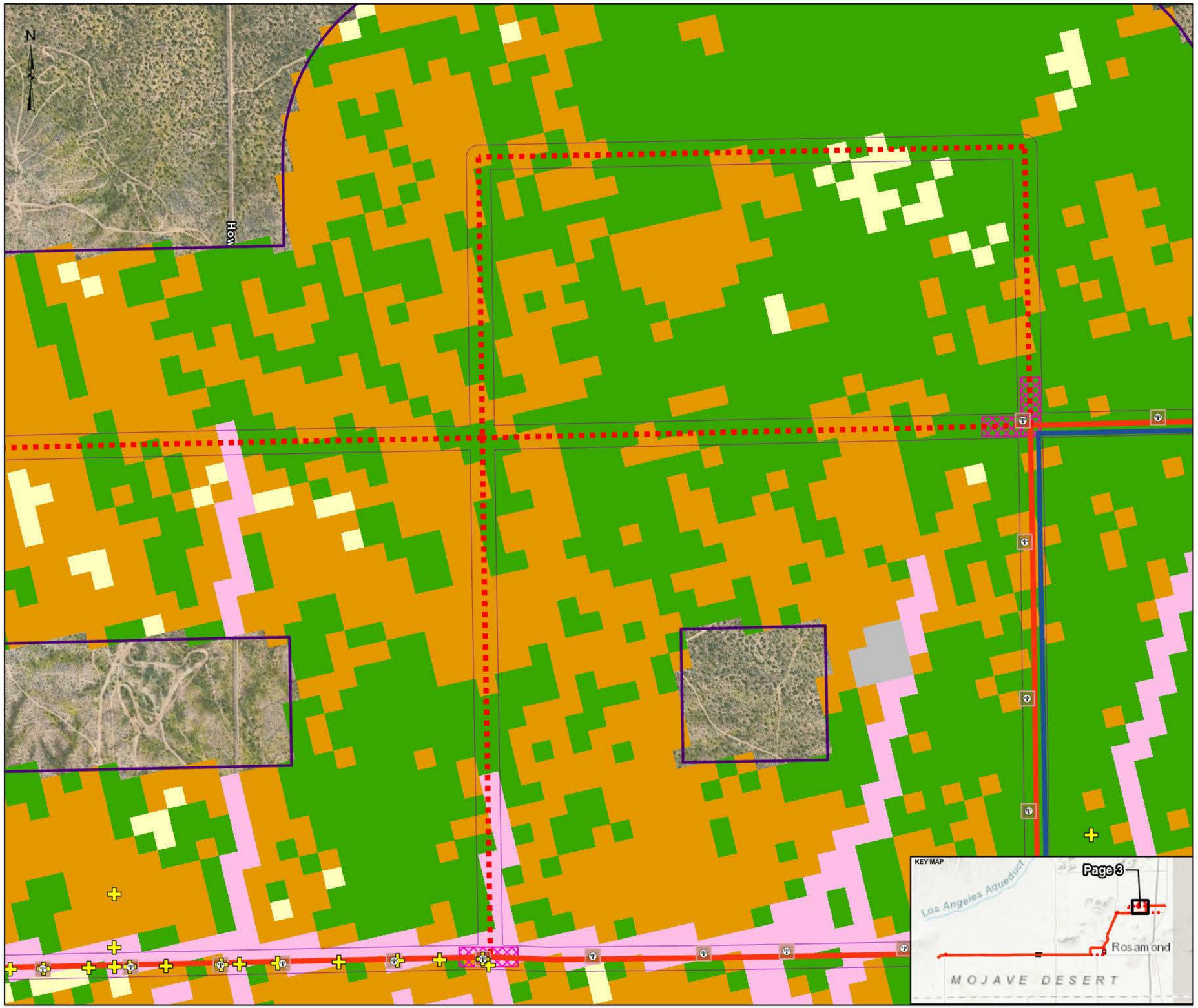

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Route Options 1-6, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
- Proposed Access Roads

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000
1" = 500 ft FEET

NOTE(S)
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2. TRANSMISSION LINE POLES ARE NOT TO SCALE AND ARE SYMBOLIZED LARGER FOR READABILITY. THESE POLES HAVE A UP TO A 6FT DIAMETER.

REFERENCE(S)
1. FIRE BEHAVIOR FUEL MODELS (FBFM): LANDFIRE, 2023
2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULL AND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS: HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT
wsp

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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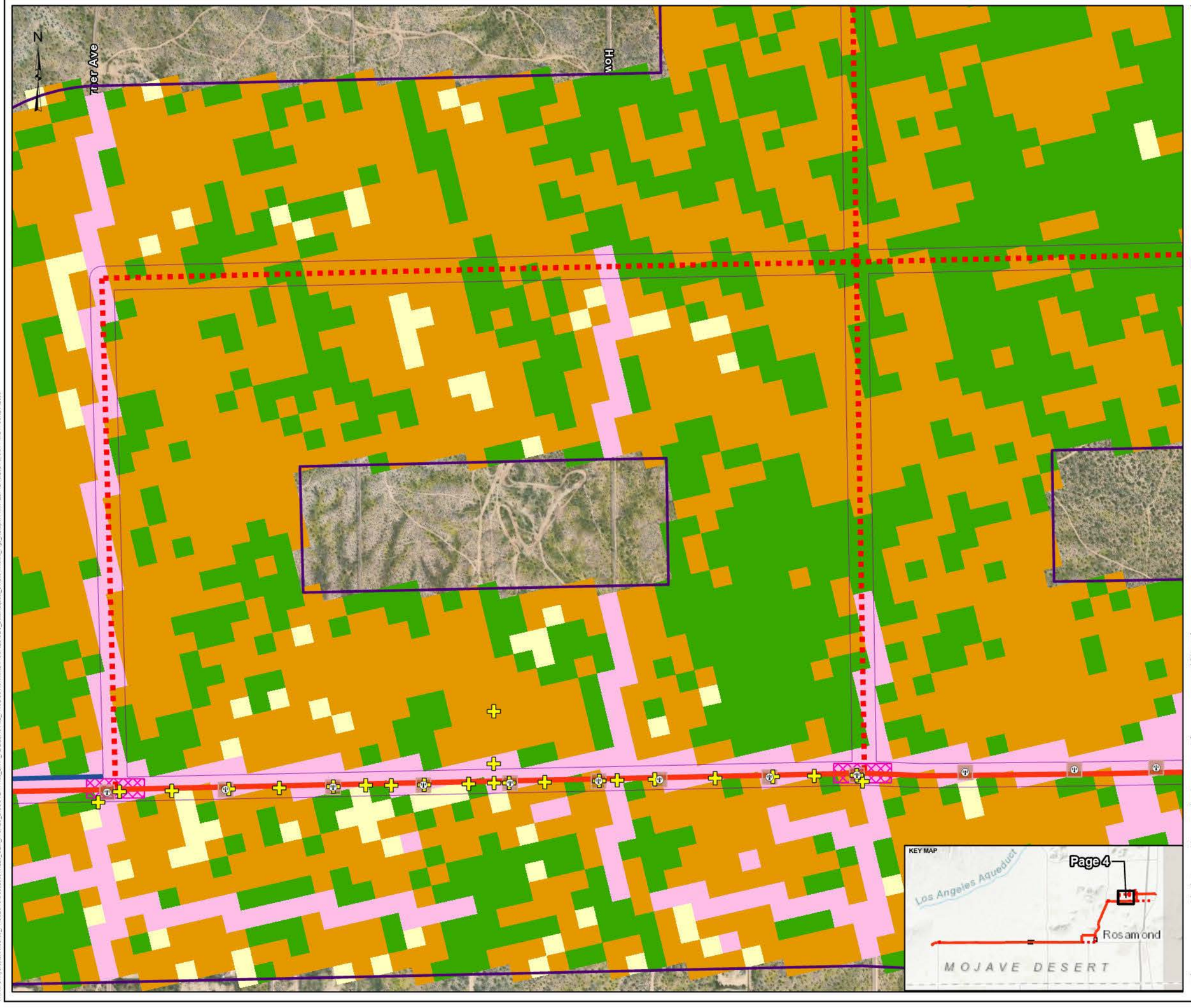

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Route Options 1-6, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
- Proposed Access Roads

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban

0 500 1,000
1" = 500 ft FEET

NOTE(S)
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REFERENCE(S)
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3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: BUREAU OF LAND MANAGEMENT, ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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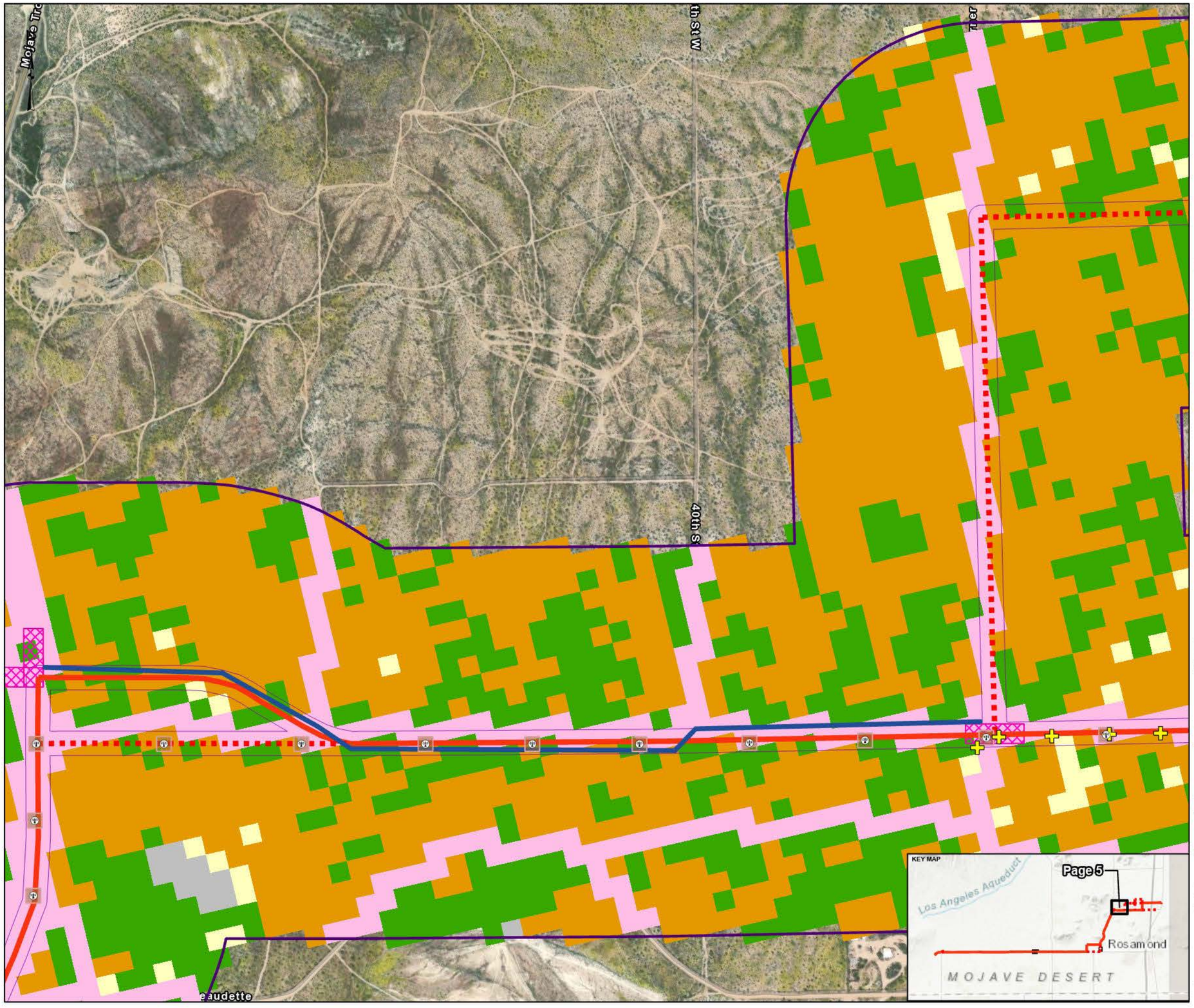

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Route Options 1-6, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
- Proposed Access Roads

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000
1" = 500 ft FEET

NOTE(S)
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REFERENCE(S)
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2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULL AND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS: HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT
wsp

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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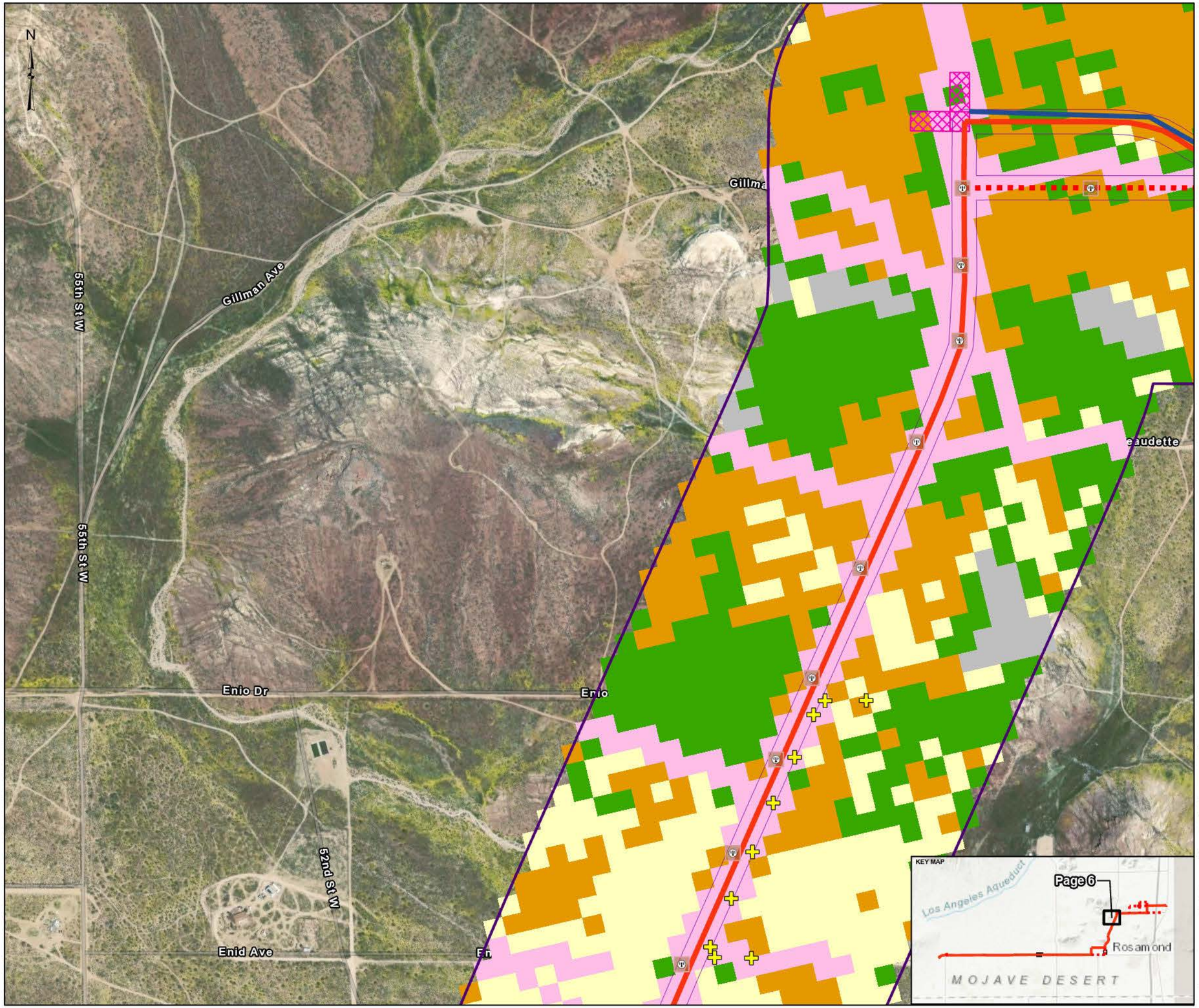

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Route Options 1-6, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
- Proposed Access Roads

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000
1" = 500 ft FEET

NOTE(S)
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REFERENCE(S)
1. FIRE BEHAVIOR FUEL MODELS (FBFM), LANDFIRE, 2023
2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULL AND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS: HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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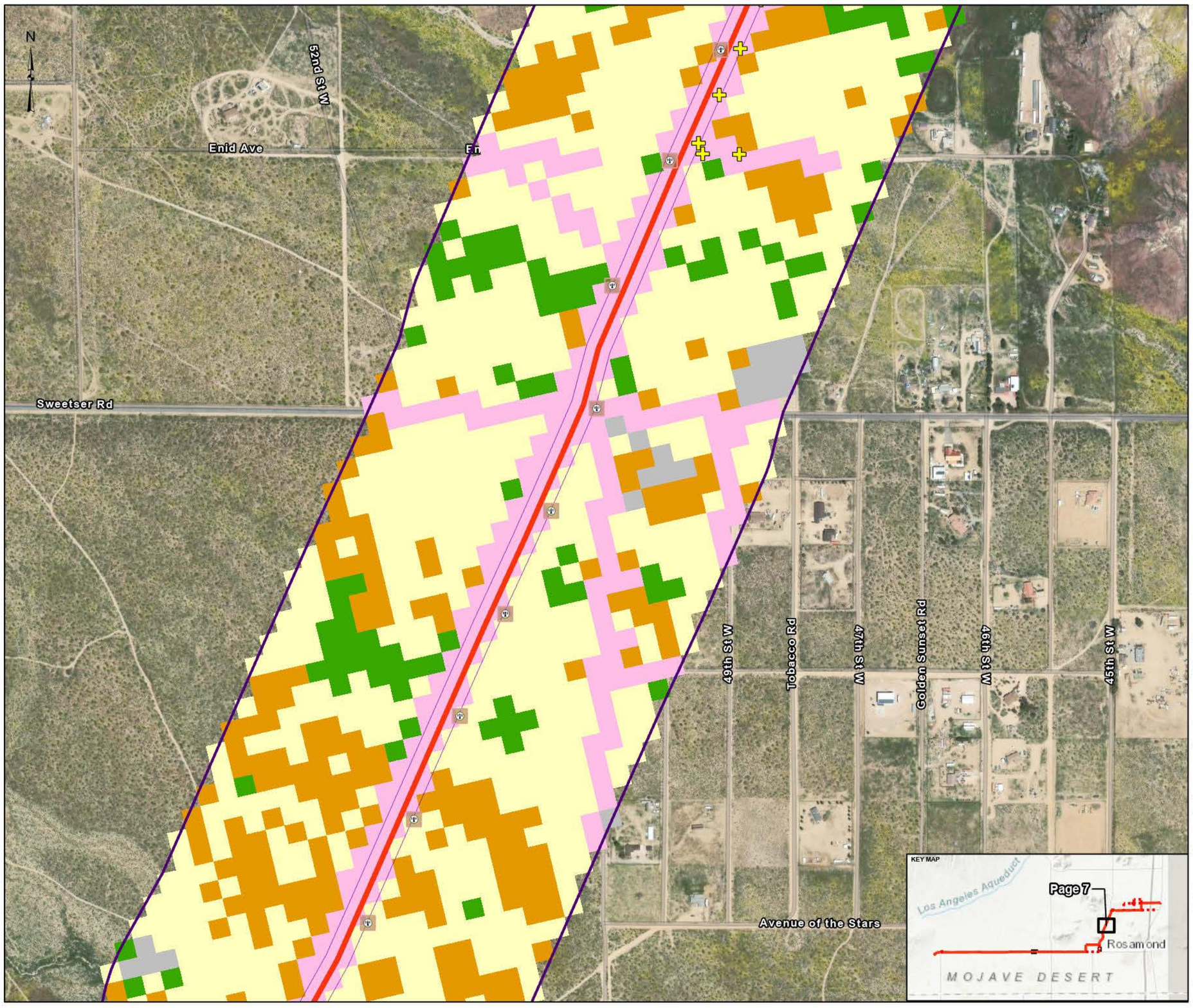

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites

Project Components
- Preferred Route, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000
1" = 500 ft FEET

NOTE(S)
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REFERENCE(S)
1. FIRE BEHAVIOR FUEL MODELS (FBFM), LANDFIRE, 2023
2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULL AND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS; HYDRO.STOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
HYBRID REFERENCE LAYER: ESRI COMMUNITY MAPS CONTRIBUTORS, CALIFORNIA STATE PARKS, © OPENSTREETMAP, MICROSOFT, ESRI, TOMTOM, GARMIN, SAFEGRAPH, GEOTECHNOLOGIES, INC, METI/NASA, USGS, BUREAU OF LAND MANAGEMENT, EPA, NPS, US CENSUS BUREAU, USDA, USFWS
WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-7

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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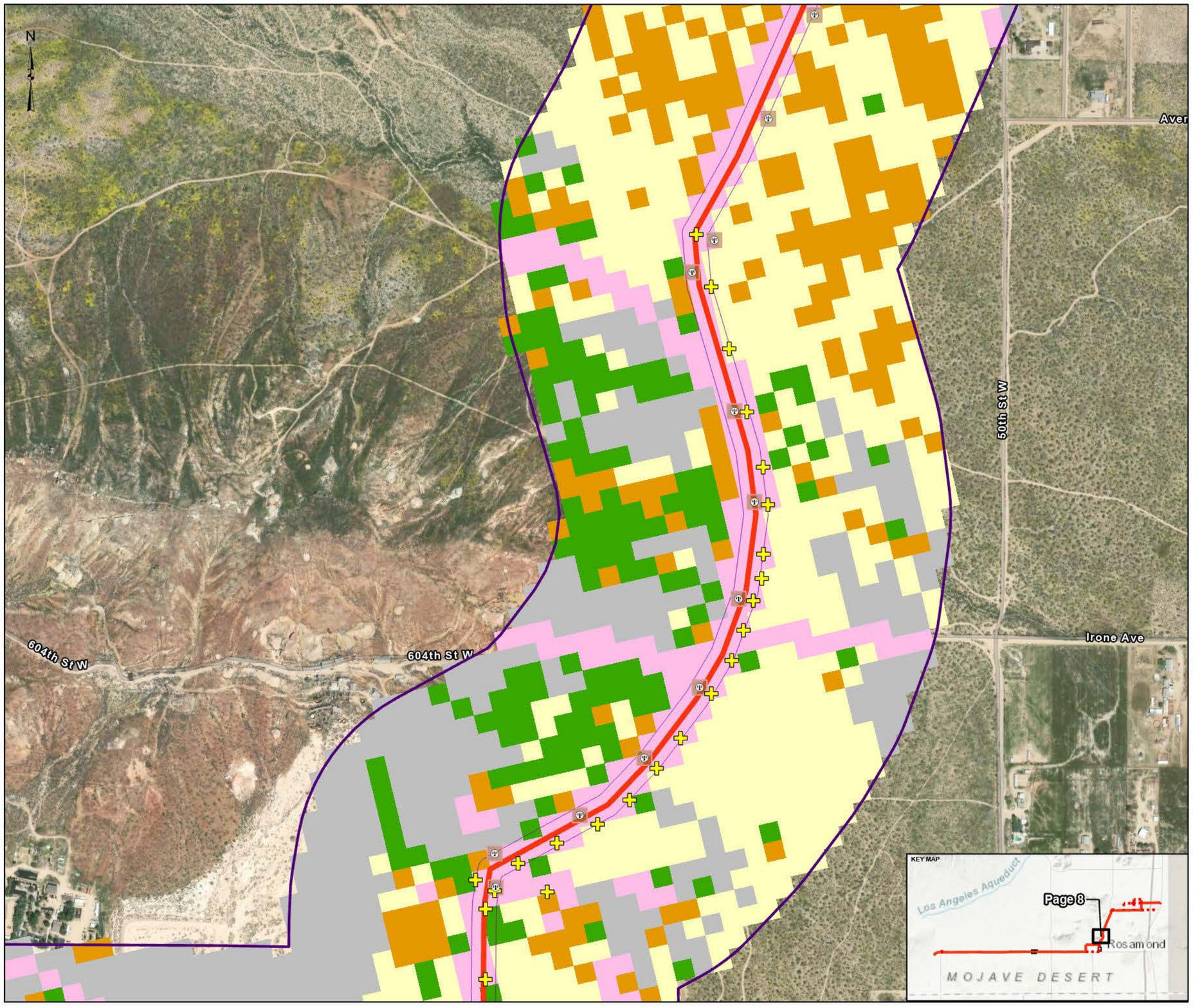

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites

Project Components
- Preferred Route, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000
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REFERENCE(S)
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2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULLAND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS: HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-8

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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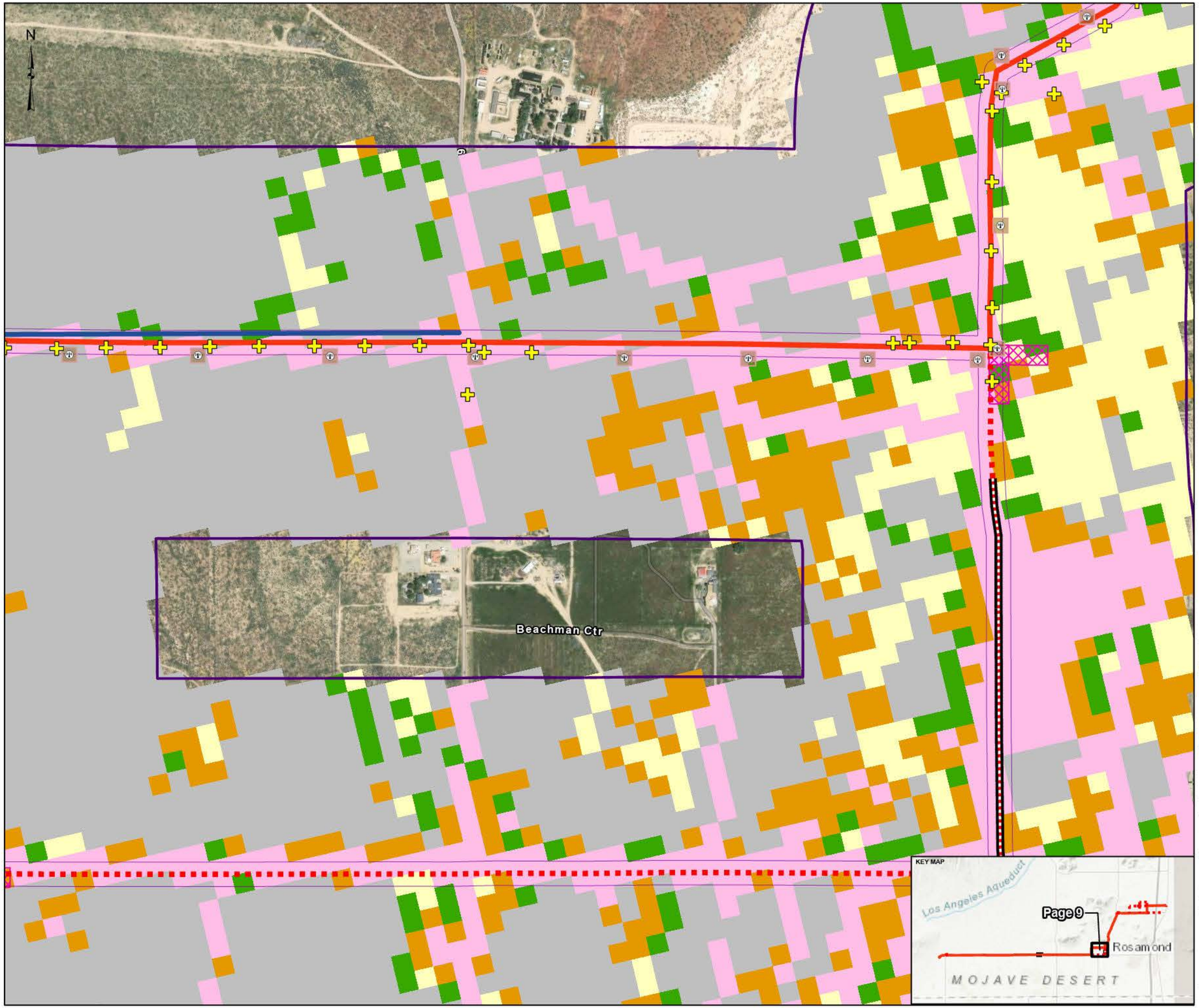

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Route Options 1-6, Aboveground
- Route Options 1-6, Underground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
- Proposed Access Roads

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000

1" = 500 ft FEET

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REFERENCE(S)
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

wsp

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-9

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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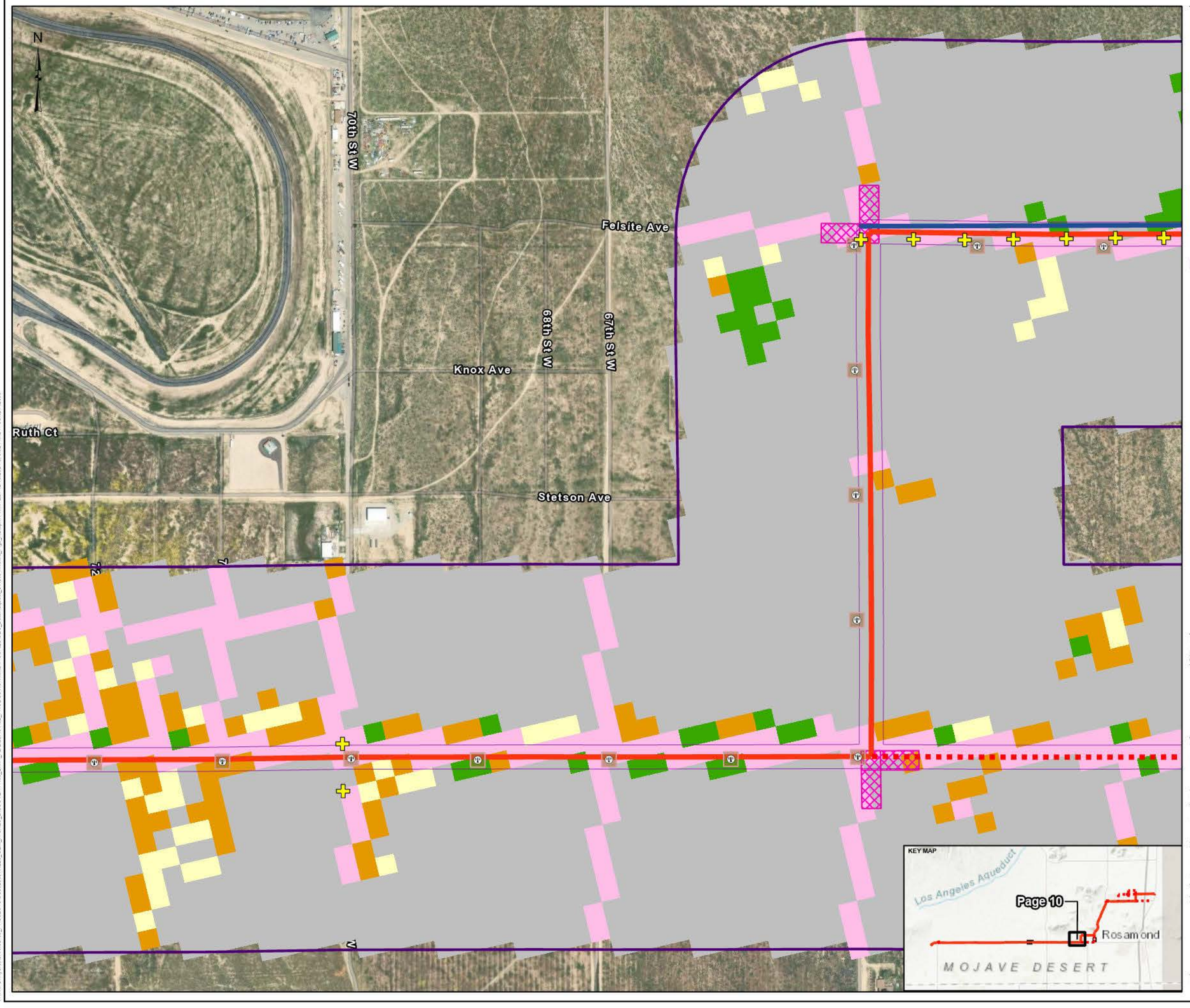

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Route Options 1-6, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
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Fire Behavior Fuel Model (FBFM)
- FBFM2
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- FBFM8
- Urban
- Barren

0 500 1,000
1" = 500 ft FEET

NOTE(S)
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REFERENCE(S)
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3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

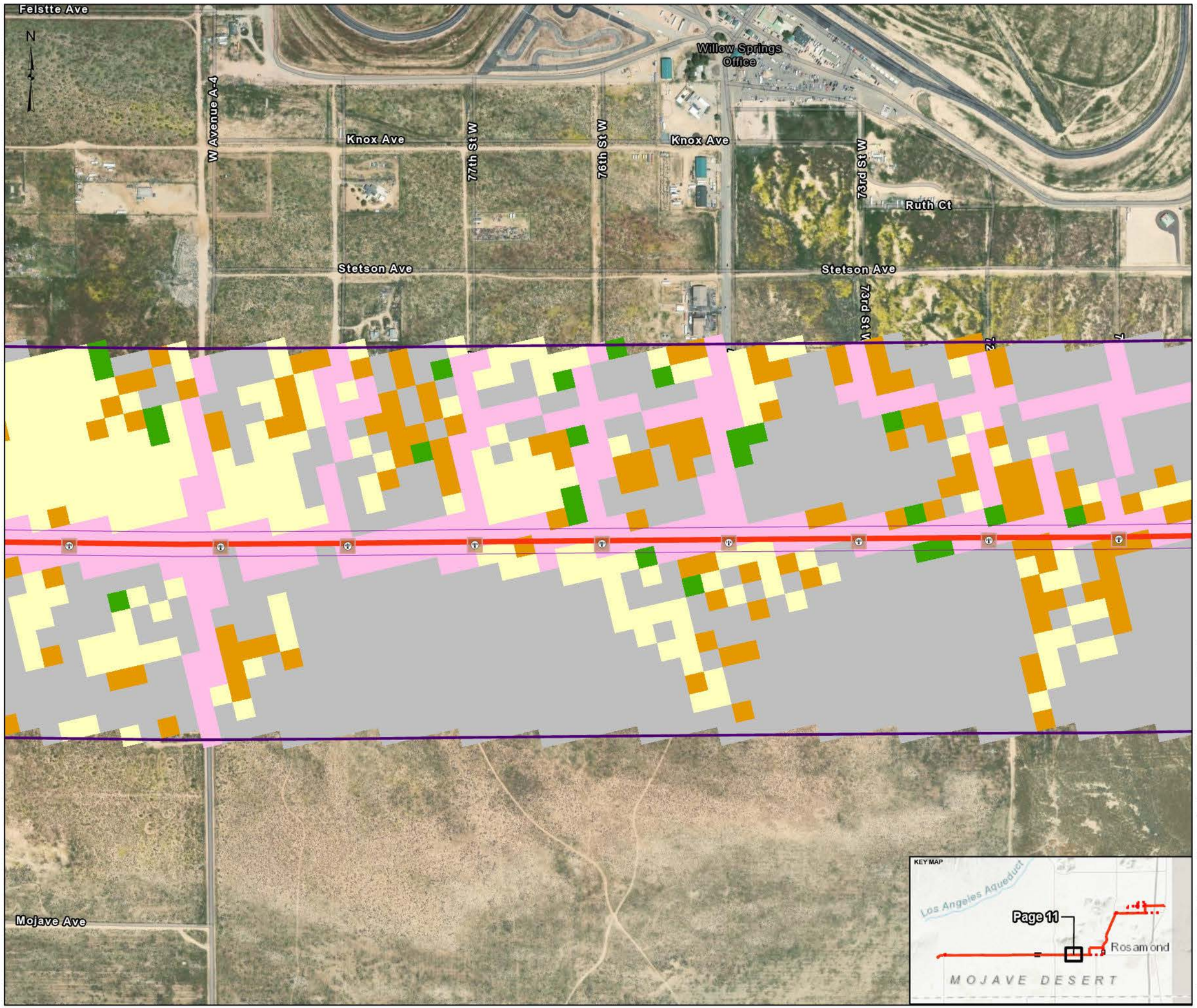
CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

PATH: G:\Hydrostor\Arcwi99_PROJECTS\US0029687.4229_GEM_A-CAES_DISCOVERY\100_DATA_ADEQUACY\02_PRODUCTION\MXD\FIGURES\CEC_DataRequest_6\Revo\wisfmx_Figs_KD.aprx PRINTED: 12/18/2024 at 3:52 PM BY: vSKOT12689



LEGEND

Transmission Line Pole Location
- Proposed

Proposed Transmission Pole Components
- Transmission Pole Construction Sites

Project Components
- Preferred Route, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000
1" = 500 ft FEET

NOTE(S)
1. PROJECT ROW IS 62.5 FT ON EITHER SIDE OF THE PROPOSED TRANSMISSION LINE ROUTE.
2. TRANSMISSION LINE POLES ARE NOT TO SCALE AND ARE SYMBOLIZED LARGER FOR READABILITY. THESE POLES HAVE A UP TO A 6FT DIAMETER.

REFERENCE(S)
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2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULLAND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS: HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
HYBRID REFERENCE LAYER: ESRI COMMUNITY MAPS CONTRIBUTORS, CALIFORNIA STATE PARKS, © OPENSTREETMAP, MICROSOFT, ESRI, TOMTOM, GARMIN, SAFEGRAPH, GEOTECHNOLOGIES, INC, METI/NASA, USGS, BUREAU OF LAND MANAGEMENT, EPA, NPS, US CENSUS BUREAU, USDA, USFWS
WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

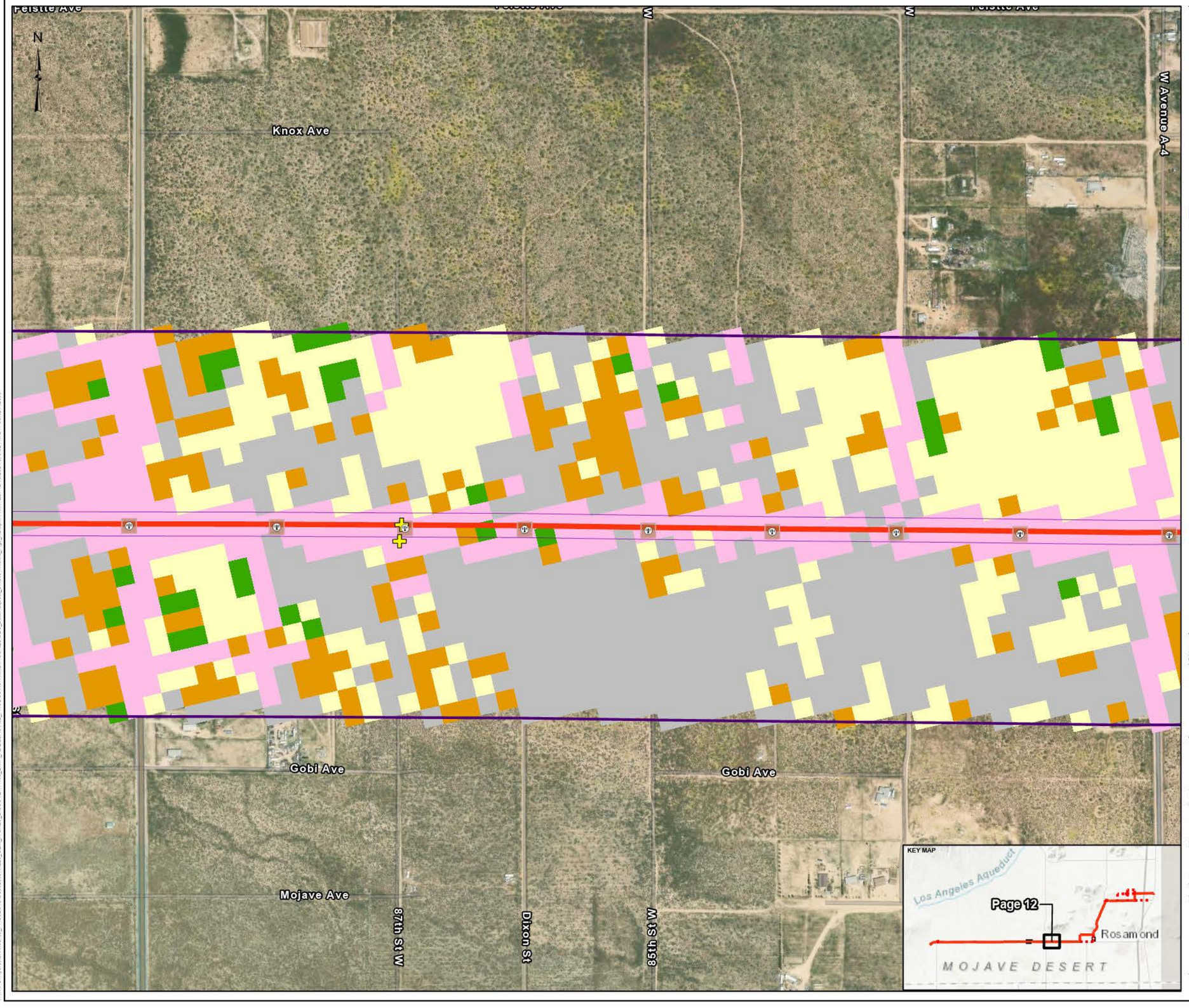
TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-11

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites

Project Components
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-12

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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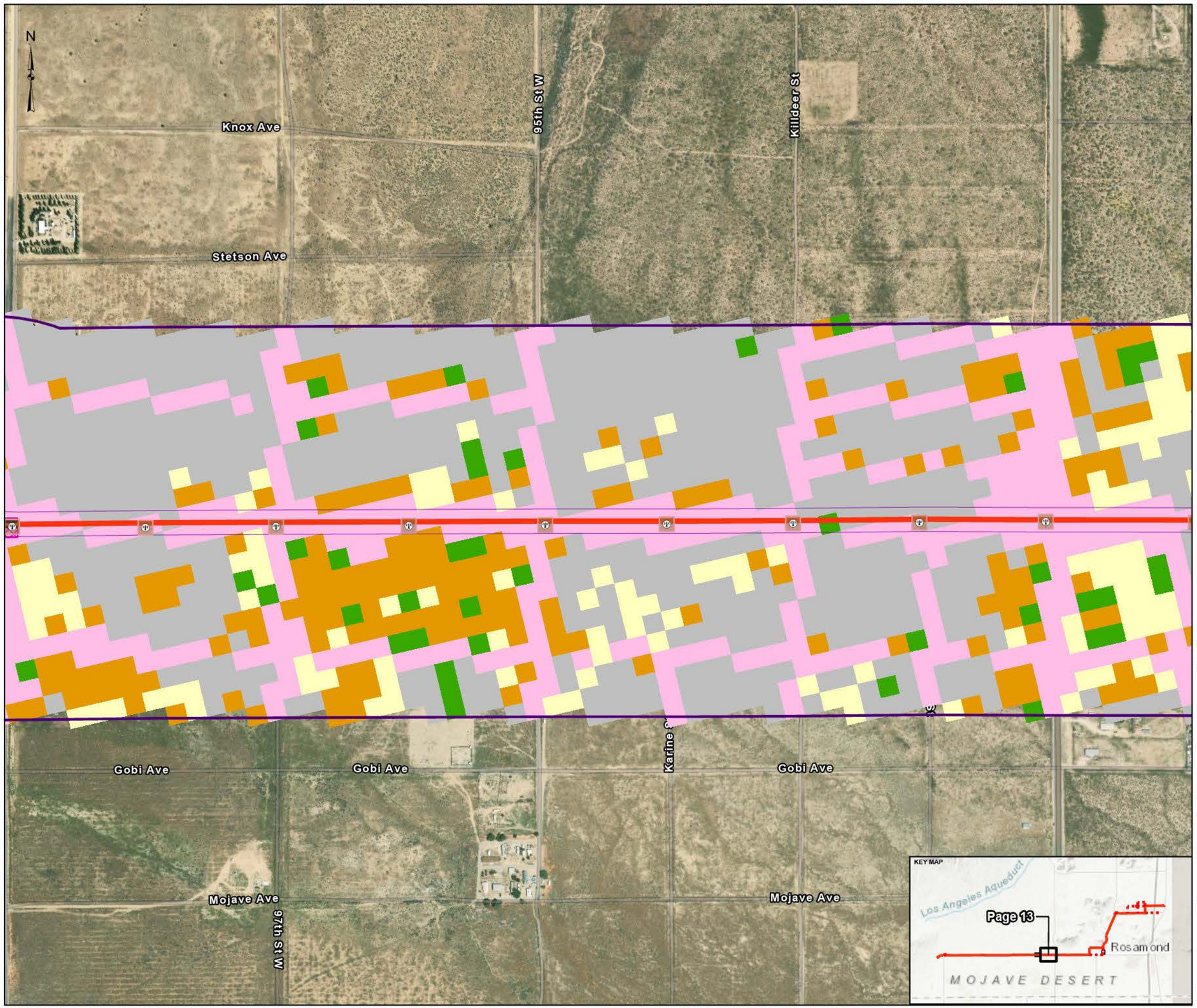

LEGEND

Transmission Line Pole Location
- Proposed

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Preferred Route, Underground
- Project ROW
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Fire Behavior Fuel Model (FBFM)
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT
wsp

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-13

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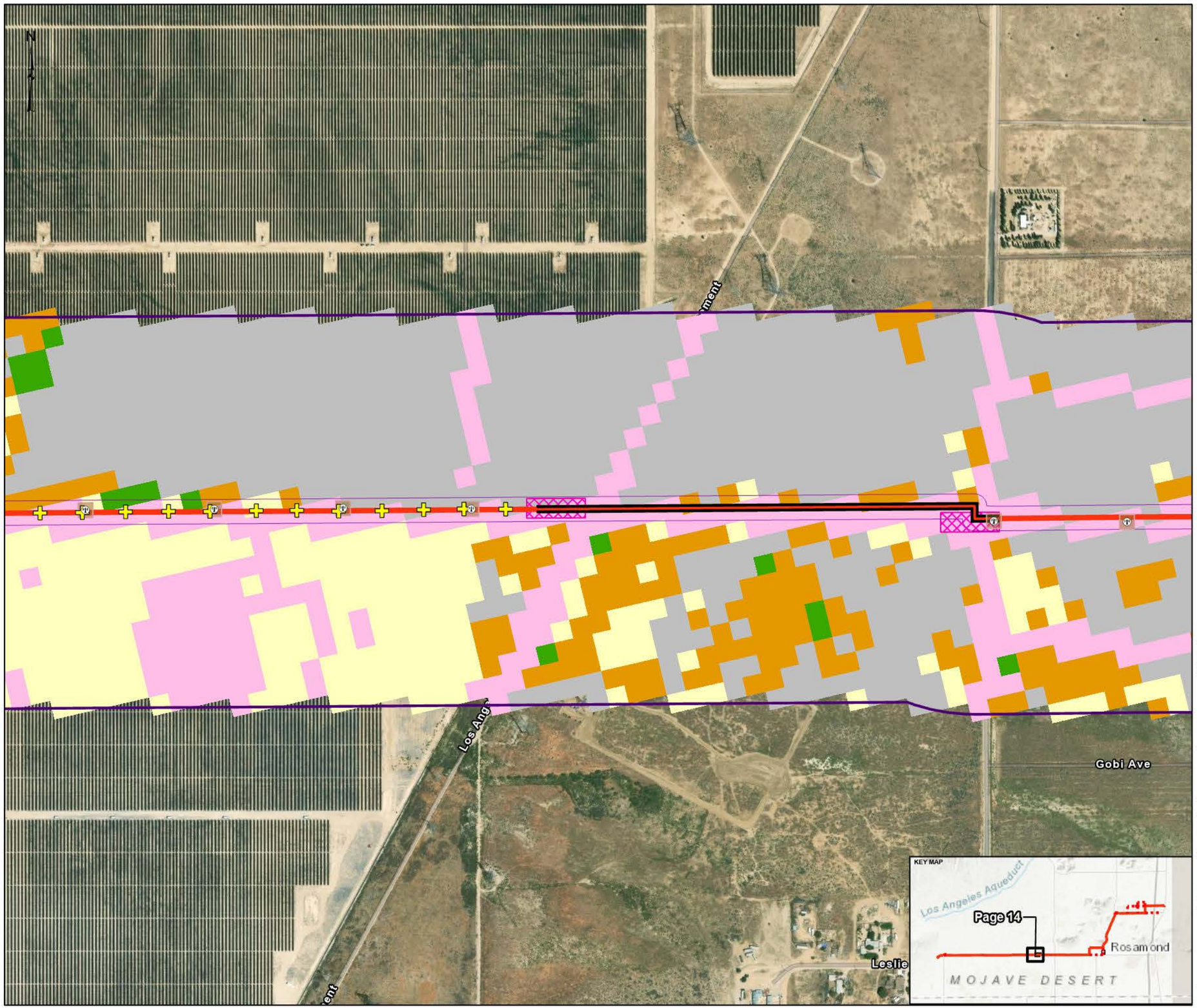

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Preferred Route, Underground
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Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
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- Urban
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

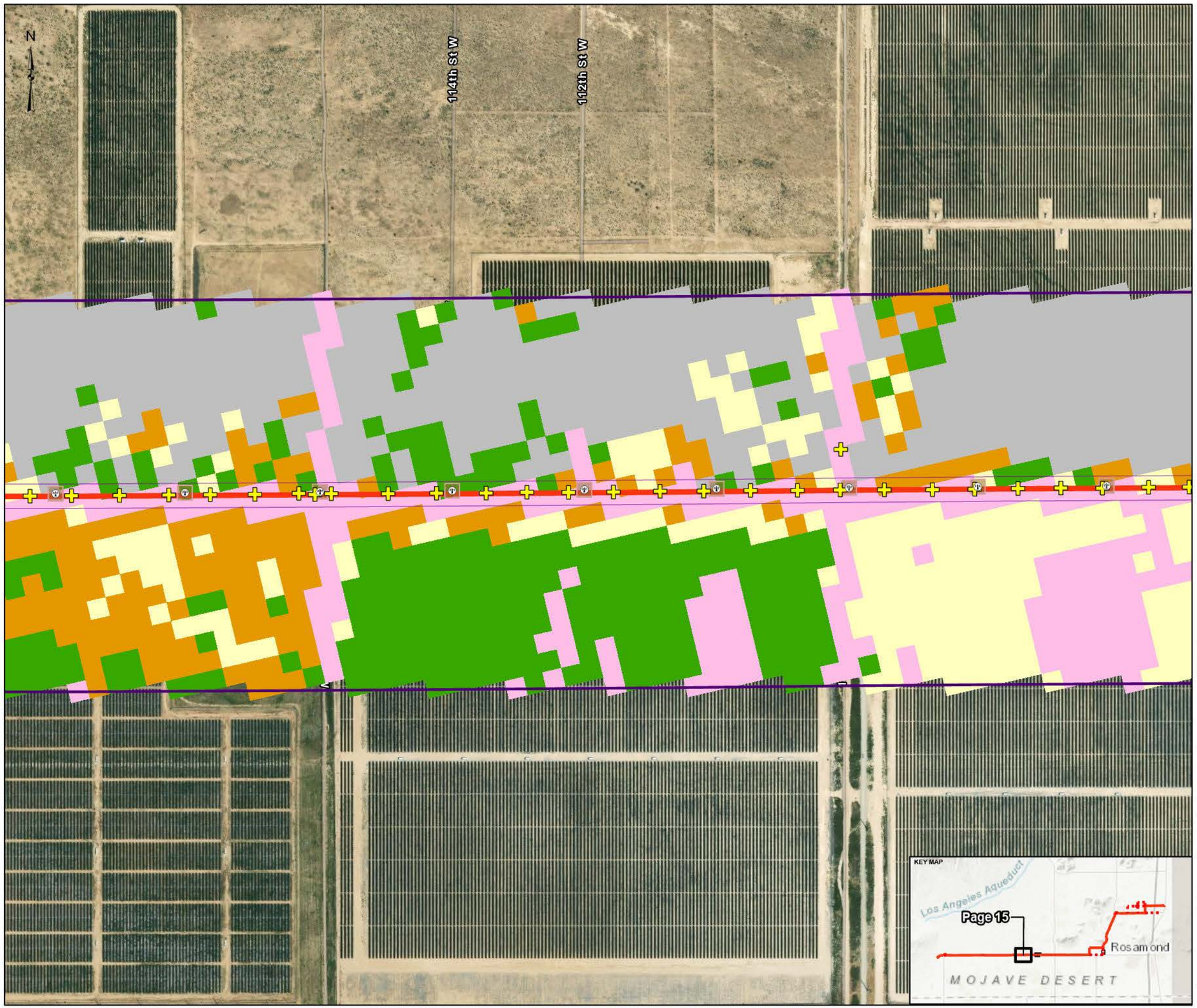
TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-14

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites

Project Components
- Preferred Route, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line

Fire Behavior Fuel Model (FBFM)
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

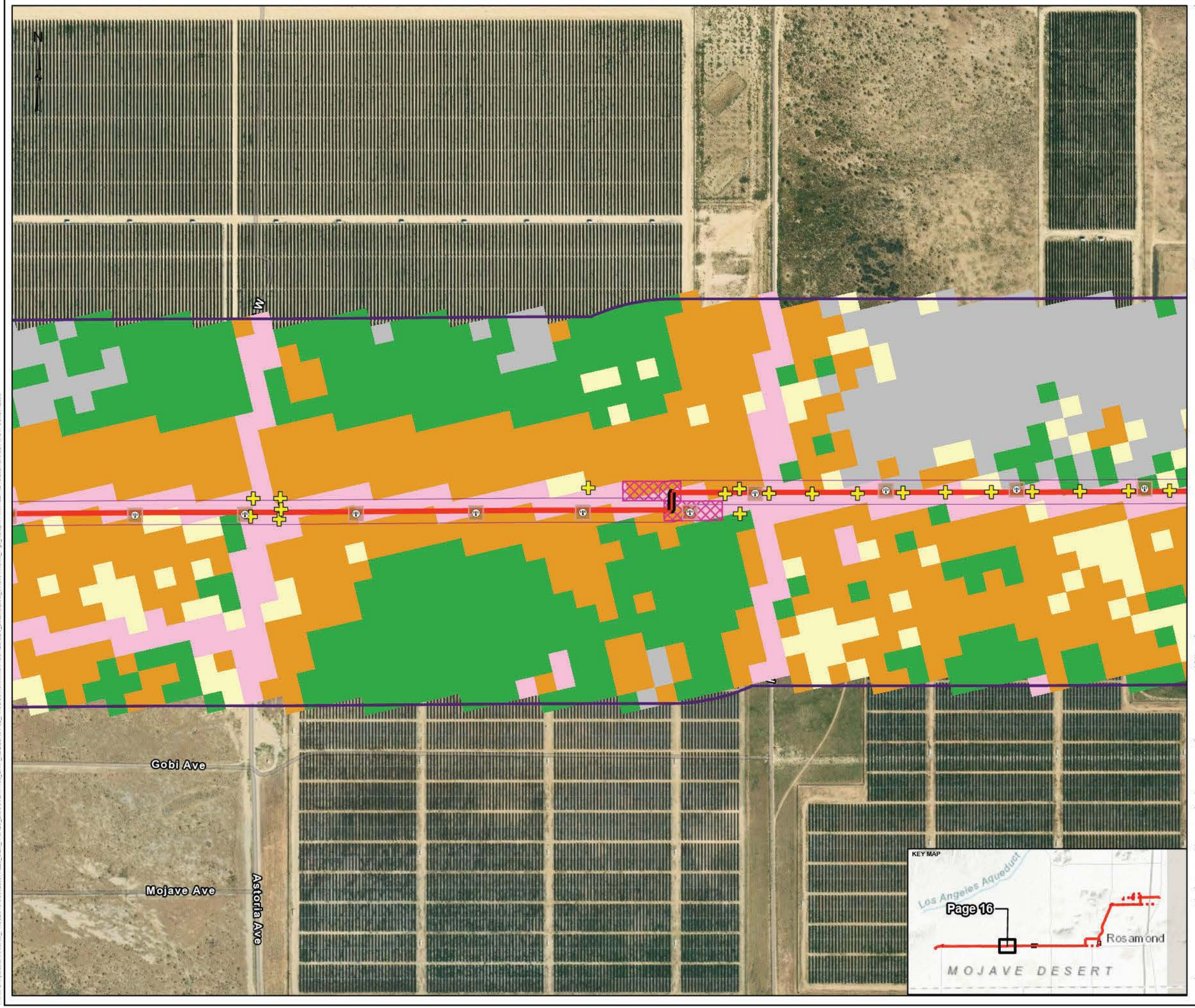
TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-15

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Preferred Route, Underground
- Project ROW
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4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
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CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

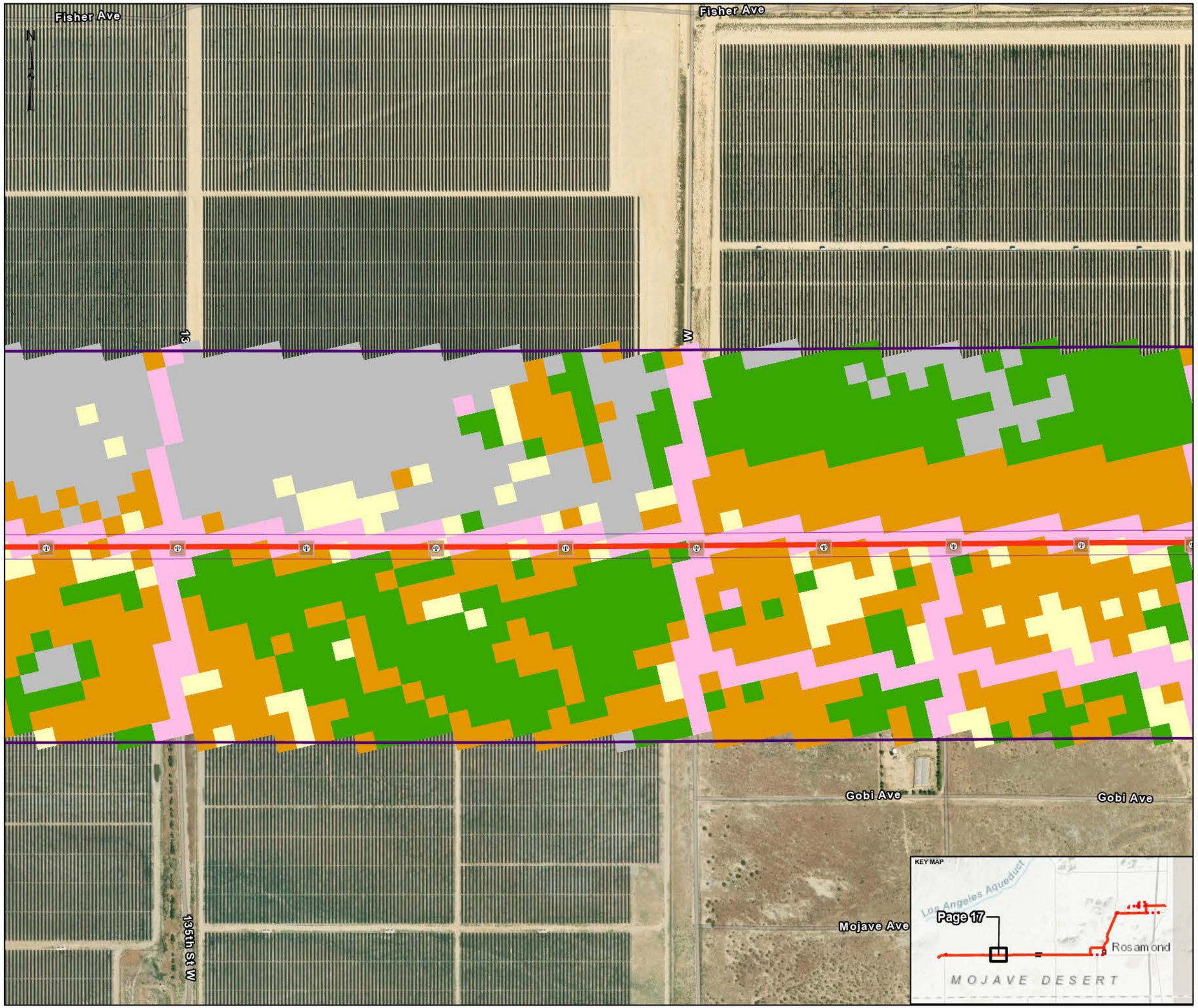
TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-16

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites

Project Components
- Preferred Route, Aboveground
- Project ROW
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GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-17

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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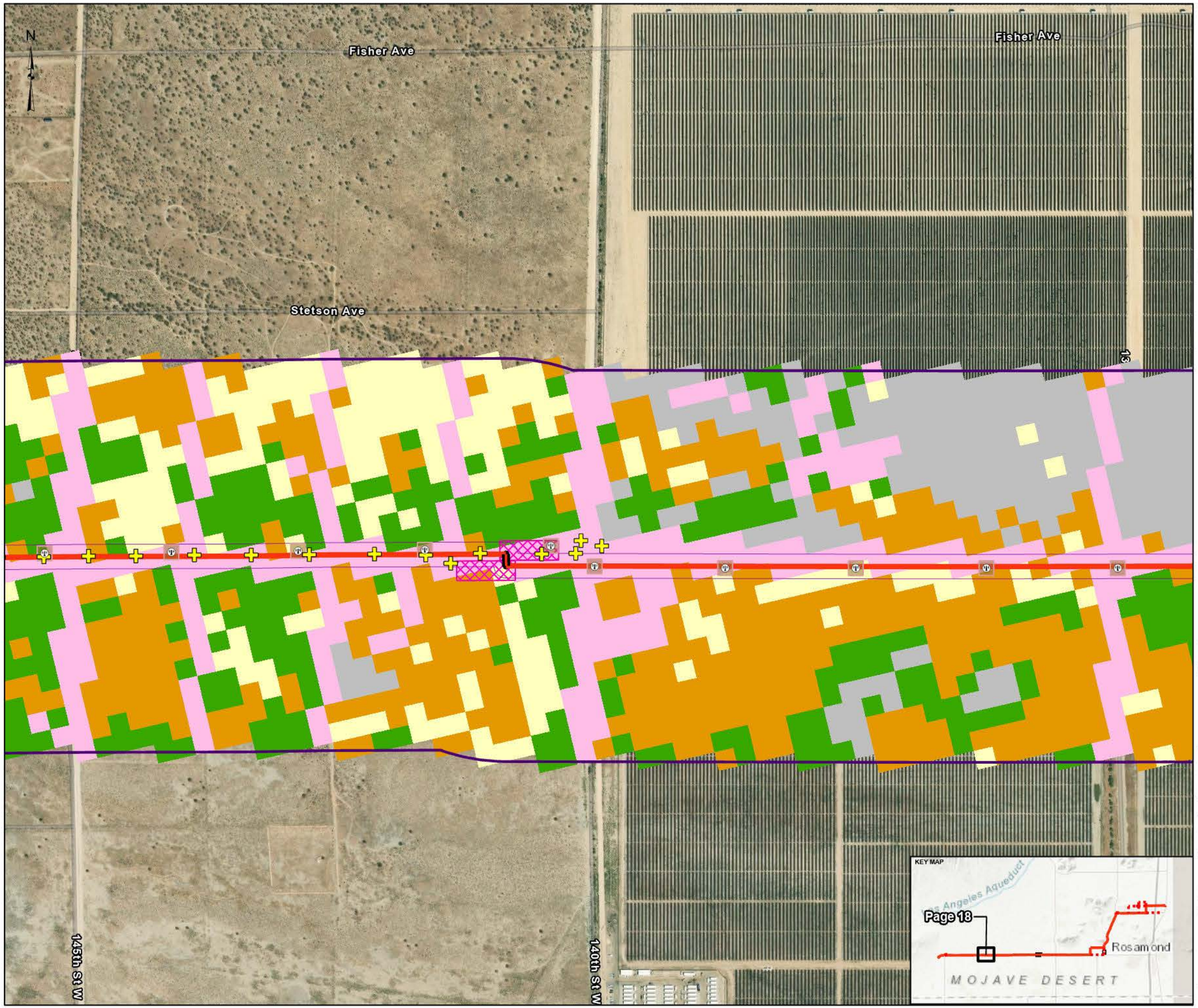

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-18

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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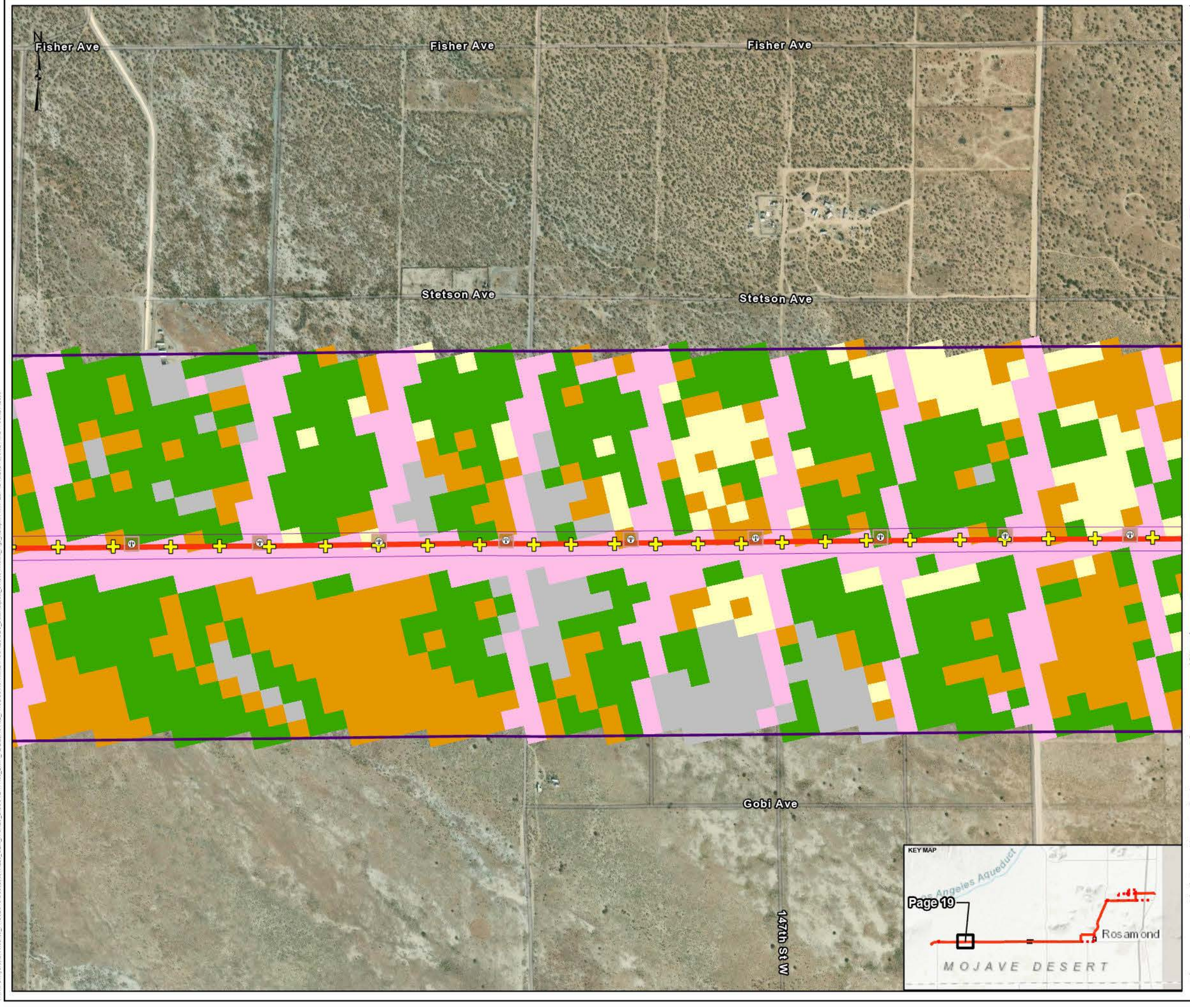

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites

Project Components
- Preferred Route, Aboveground
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-19

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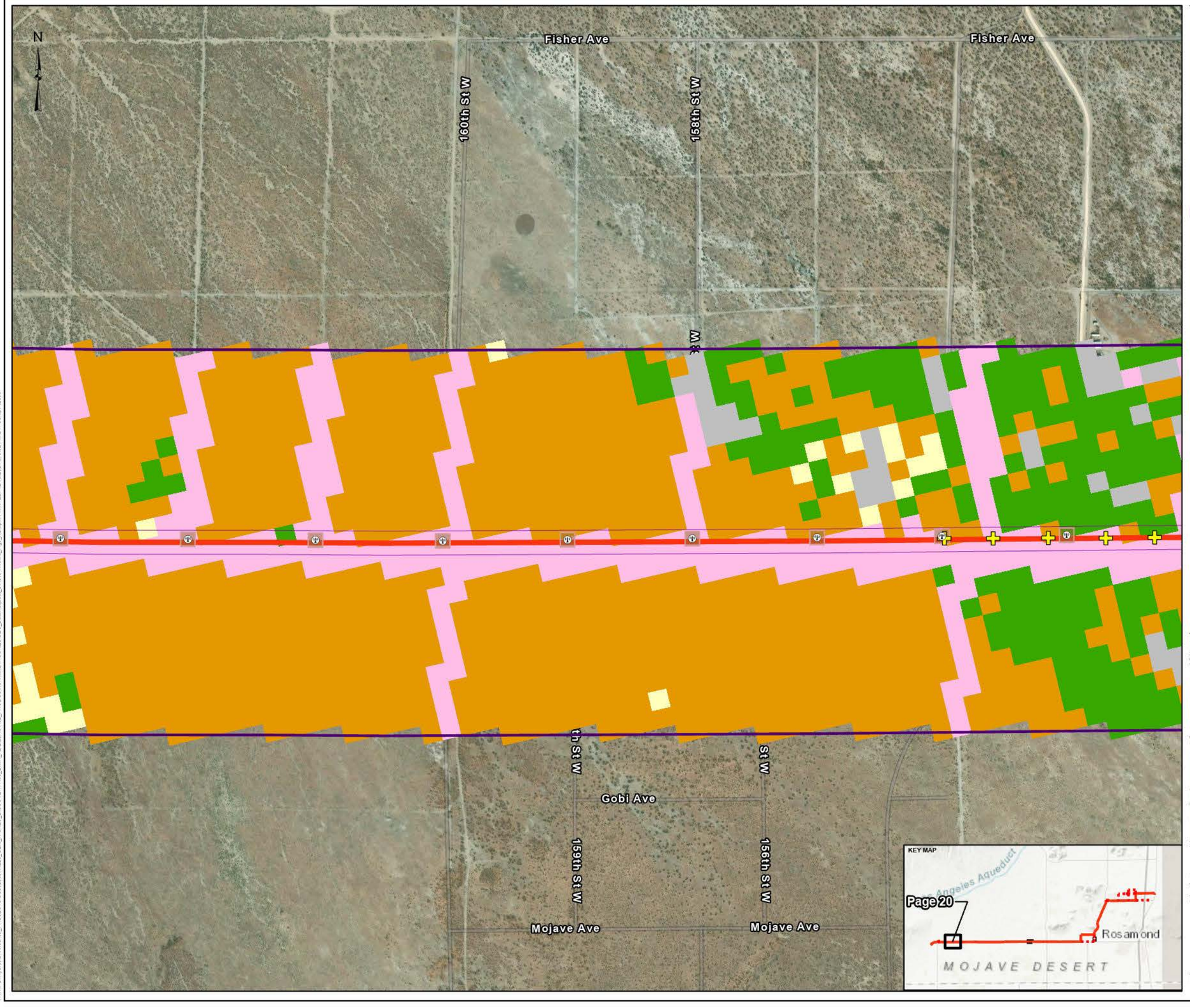

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites

Project Components
- Preferred Route, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000
1" = 500 ft FEET

NOTE(S)
1. PROJECT ROW IS 62.5 FT ON EITHER SIDE OF THE PROPOSED TRANSMISSION LINE ROUTE.
2. TRANSMISSION LINE POLES ARE NOT TO SCALE AND ARE SYMBOLIZED LARGER FOR READABILITY. THESE POLES HAVE A UP TO A 6FT DIAMETER.

REFERENCE(S)
1. FIRE BEHAVIOR FUEL MODELS (FBFM), LANDFIRE, 2023
2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULL AND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS; HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-20

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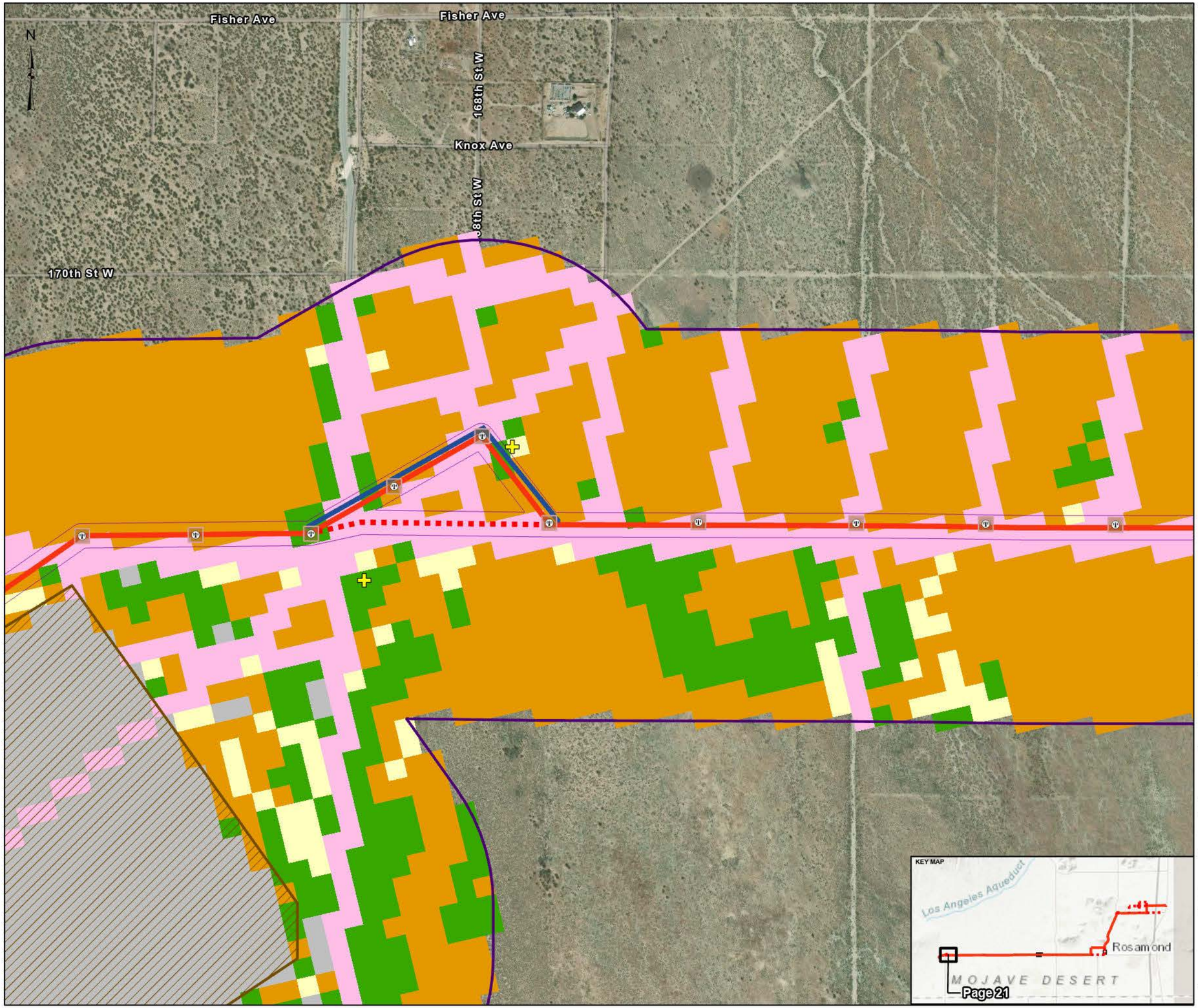

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites

Project Components
- Preferred Route, Aboveground
- Route Options 1-6, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
- SCE Whirlwind Substation
- Proposed Access Roads

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000
1" = 500 ft FEET

NOTE(S)
1. PROJECT ROW IS 62.5 FT ON EITHER SIDE OF THE PROPOSED TRANSMISSION LINE ROUTE
2. TRANSMISSION LINE POLES ARE NOT TO SCALE AND ARE SYMBOLIZED LARGER FOR READABILITY. THESE POLES HAVE A UP TO A 6FT DIAMETER.

REFERENCE(S)
1. FIRE BEHAVIOR FUEL MODELS (FBFM): LANDFIRE, 2023
2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULL AND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS: HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT
wsp

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-21

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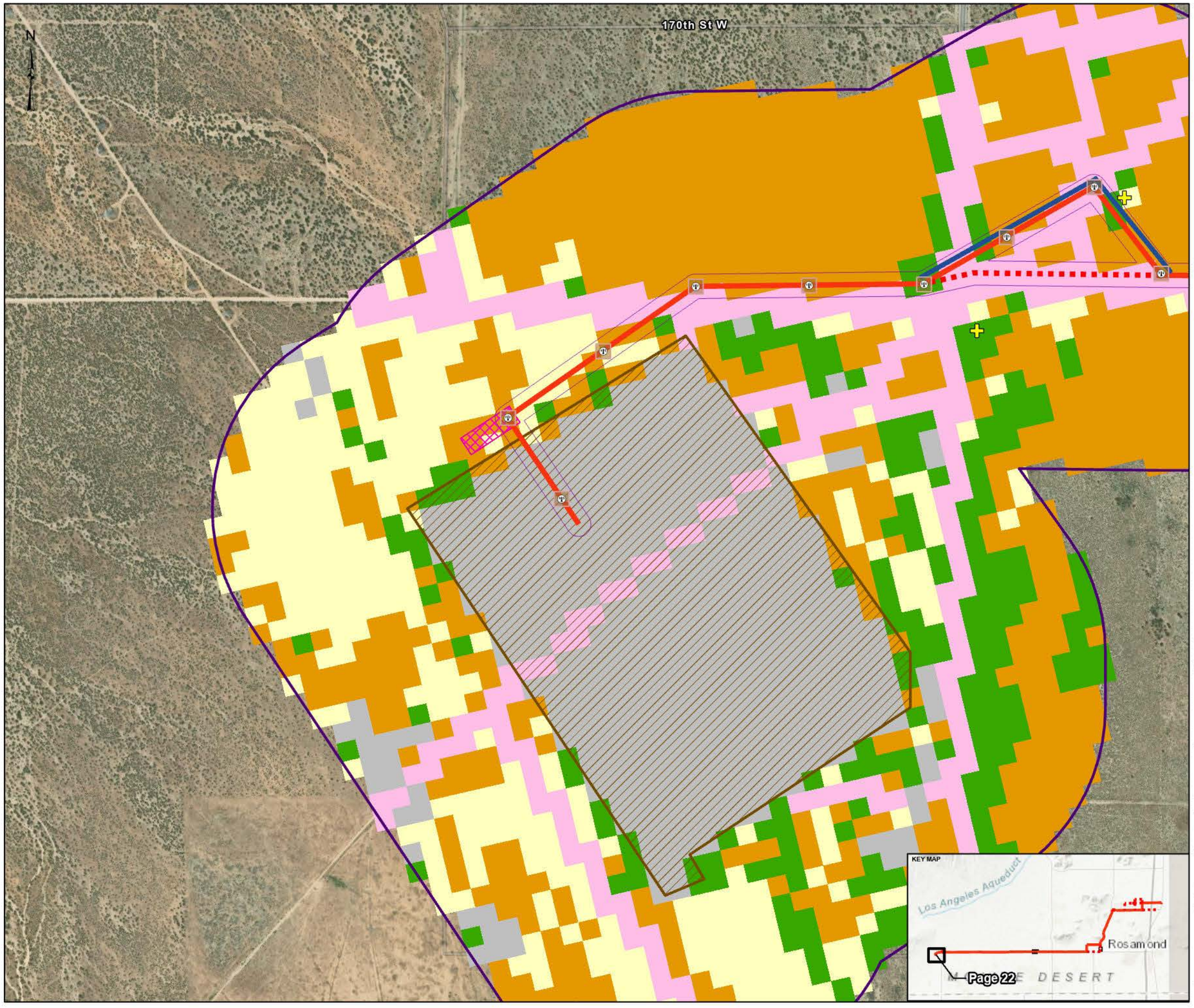

LEGEND

Transmission Line Pole Location
- Proposed
- Existing

Proposed Transmission Pole Components
- Transmission Pole Construction Sites
- Preliminary Pull and Tensioning Sites

Project Components
- Preferred Route, Aboveground
- Route Options 1-6, Aboveground
- Project ROW
- 1,000 ft Buffer around Project Parcels and Transmission Line
- SCE Whirlwind Substation
- Proposed Access Roads

Fire Behavior Fuel Model (FBFM)
- FBFM2
- FBFM5
- FBFM8
- Urban
- Barren

0 500 1,000
1" = 500 ft FEET

NOTE(S)
1. PROJECT ROW IS 62.5 FT ON EITHER SIDE OF THE PROPOSED TRANSMISSION LINE ROUTE
2. TRANSMISSION LINE POLES ARE NOT TO SCALE AND ARE SYMBOLIZED LARGER FOR READABILITY. THESE POLES HAVE A UP TO A 6FT DIAMETER.

REFERENCE(S)
1. FIRE BEHAVIOR FUEL MODELS (FBFM): LANDFIRE, 2023
2. PROPOSED TRANSMISSION LINE, PRELIMINARY PULL AND TENSIONING SITES, PROPOSED T-LINE POLE AND CONSTRUCTION SITES, PROPOSED ACCESS ROADS: HYDROSTOR, 2024
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
4. MAP SERVICE LAYER CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS
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WORLD IMAGERY: MAXAR

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
CEC DATA REVISIONS

TITLE
FIRE BEHAVIOR FUEL MODELS (FBFM), PROJECT COMPONENTS, PROPOSED ACCESS ROADS AND PROPOSED TRANSMISSION LINE POLE LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-12-18
DESIGNED	KD
PREPARED	KD
REVIEWED	NN
APPROVED	JP

PROJECT NO.	PHASE	REV.	FIGURE
US0029687.5559	001	0	DR116-22

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